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THE HEALTH MAGAZINE

HYGEIA

It's Smart to see well!

see page 682

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AUGUST
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No. 6 Vegetables, chicken livers, barley

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WHO'S WHO IN HYGEIA

PHILIP REICHERT, M.D., New York City, is "constantly trying to keep numerous hobbies from interfering with his practice, and vice versa," as he declares. His hobbies center about mathematical and mechanical gadgets which can be taken apart and put together again. In his research at Rockefeller Institute, he painstakingly manipulated single bacteria and measured their respiration. He has also made a study of precision ballistics and holds an Army rating as a pistol expert.

His collector's impulses have led him to pick up old timepieces and historical diagnostic instruments in out-of-the-way places. These are then carefully repaired and put in working order in a complete miniature machine shop. From all this has grown a museum of the original instruments of a century of famous doctors and shows the tangible development of research in heart disease.

H. A. SLESINGER, M.D., has had several articles published about children in scientific journals. He graduated from the University of Pittsburgh Medical School in 1926 and is located in Windber, Pa.

EDGAR A. GUEST JR., the son of the well known poet-philosopher, is known around his home town, Detroit, for being a newspaper reporter on the *Free Press*, a news broadcaster at 6:45 a. m. six mornings a week, 6 feet tall and for weighing 200 pounds—185 more than his son about whom he writes. Now 27 years old, the author graduated from high school at 16, which his family thought was too young an age for college. So they sent him to Europe for the summer, thence to Culver Military Academy for a year. Immediately after graduating from the University of Michigan in 1934, he went to work for the Detroit *Free Press*, where his illustrious father has been since 1895.

ELMER L. SEVRINGHAUS, M.D., is Professor of Medicine at the University of Wisconsin. His interest in sex-endocrine physiology was aroused by the research work of a graduate student in one of his courses.

HYGEIA

THE HEALTH MAGAZINE

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CONTENTS FOR AUGUST

COVER ..... Steve Heiser

THOUGH I AM FALLEN — A Poem ..... Nell Griffith Wilson 678

PIONEERING IN CANCER EDUCATION — An Editorial ..... W. W. Bauer, M.D. 679

ACCOLADE ..... Philip Reichert, M.D. 680

IT'S SMART TO SEE WELL! ..... Conrad Berens, M.D. 682

A WOMAN FACES FIFTY ..... Elmer L. Sevringhaus, M.D. 685

NEW BRAINS FOR OLD ..... Orvis C. Irwin, M.D. 689

PRENATAL CARE FOR FATHERS ..... Edgar A. Guest Jr. 692

THE CURED CANCER CLUB ..... Isaac F. Marcosson 694

ARE YOU A SENSIBLE SWIMMER? ..... Leon Felderman, M.D. 697

CLEANING UP ON FOOD ..... Jerome Meyers, M.D., and Elizabeth Semenoff 701

THE ALLERGIC CHILD ..... H. A. Slesinger, M.D. 704

THE DEFEAT OF THE CATTLE TICK ..... J. C. McDowell and S. R. Winters 707

MODERN NURSERY RHYMES ..... Margaretta Harmon 710

THE MECHANICS OF HEALTH ..... Halford Hallock, M.D. 712

PRESCRIBED FOR SEPTEMBER 715

THE ART OF EATING ..... Solomon Strouse, M.D. 716

CAMP COUNSEL: II ..... Lawrence Riggs 719

HIS FIRST DRIVING LESSON ..... Don C. Lyons, Ph.D 722

JOE McGEE AT THE CROSSING — A Poem ..... Ann Chipley 724

THE FAMILY HELPS THE SPASTIC CHILD ..... Belle McKinnon 725

A MUSEUM FOR CHILDREN ..... Catharine Kneeland 729

MYSTERIOUS EPIDEMICS IN HISTORY: VI ..... Claude Lillingston, M.D. 732

HEALTHGRAMS 735

FOODS AND NUTRITION

- Summer Fare ..... Harriet Morgan Fyler, Ph.D. 736
- Gelatin 741

QUESTIONS AND ANSWERS 745

BOOKS ON HEALTH 754

NERVOUS HABITS ..... William I. Fishbein, M.D. 758

SCHOOL AND HEALTH

- Health Lessons from Summer Camps — An Editorial 761
- Food for Thought ..... Carrie L. Leonard 762
- Teaching Personality Development ..... Jean V. Latimer 764
- Foods in the Body ..... Ethel Austin Martin 766

MEDICAL NEWS OF THE MONTH 768

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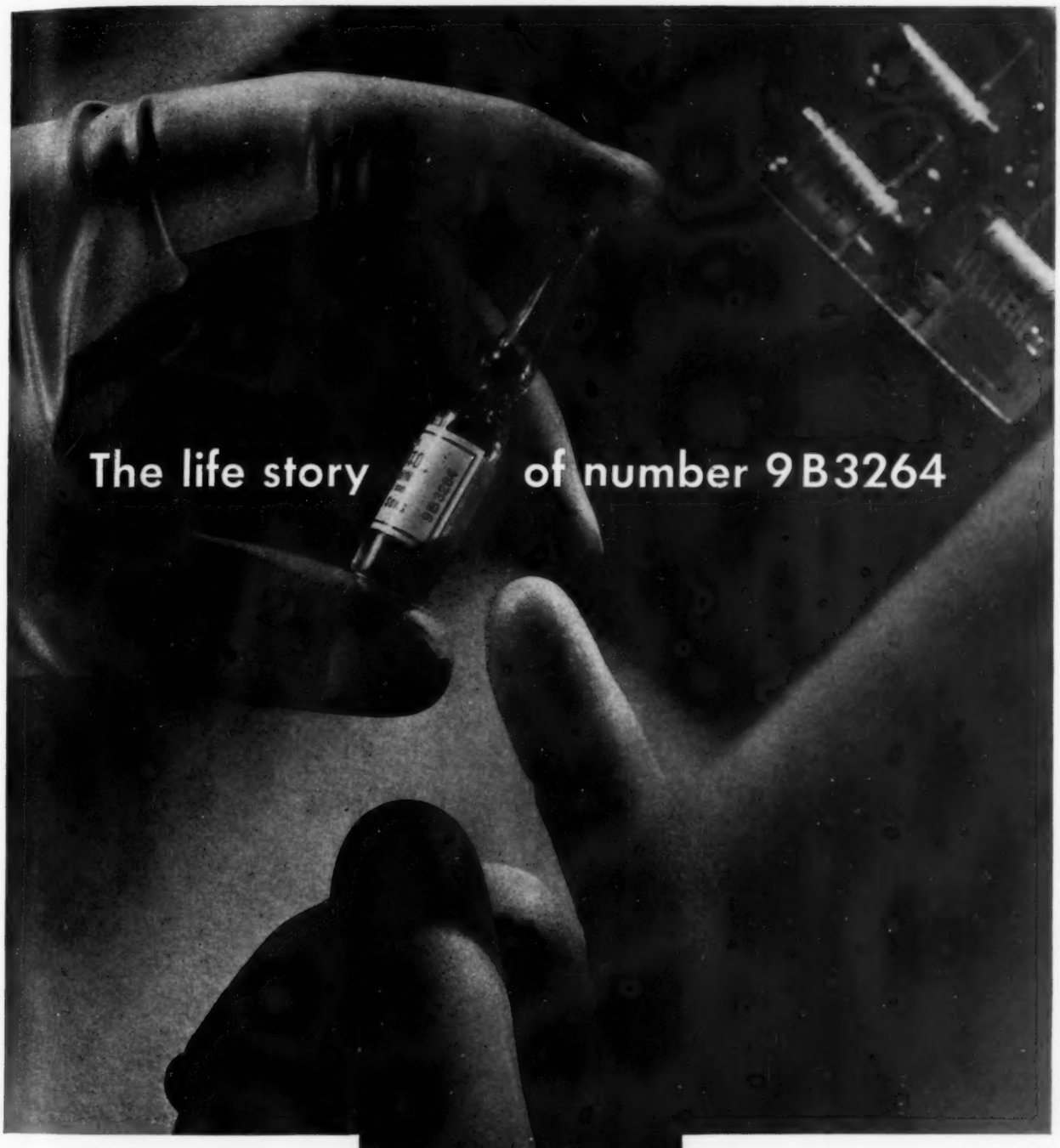

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LETTERS FROM *Readers*

Right-Sided Pain

To the Editor:

The article in the March 1939, issue, page 220, entitled "That Right-Sided Pain," by Louis M. Leibow was written, I am sure, for the purpose of educating the public on the dangers of appendicitis.

You will notice in this article an illustration under which one reads, "Leave those cathartics on the shelf when you have a right-sided pain." The error that most people make is in thinking that pain from appendicitis does start in this side. Therefore when a generalized abdominal pain, epigastric pain, or plain old stomachache comes they feel that it is perfectly safe to take a laxative and that it is not necessary to call a doctor.

The writer should have called attention to the dangers of so-called pains of indigestion, cramps, colic and stomachache as the danger signs of appendicitis. It is in this class of case that it is dangerous to take a cathartic, rather than when the pain is on the right side.

CHARLES H. WATT, M.D.
Thomasville, Ga.

▲

About "White Eskimo Chief"

To the Editor:

Quite often when I read a magazine article with which I am especially impressed, I have a desire to write the editor and tell him so. And this time I'm going to do it.

I travel around quite a bit and consequently cannot obtain your magazine regularly. But whenever possible, I do so. I have just finished a number of very good articles in the April issue, the most interesting of which—at least to me—was the one entitled "White Eskimo Chief" by Clark M. Garber.

Apparently Mr. Garber knows something about Eskimos and also something about writing, as I find his articles most interesting. I have run across some of his articles in earlier issues of HYGEIA and hope to see more in the future. I notice in the April issue you have a few brief biographies of contributing writers, and if you haven't already included Mr. Garber, I'm wondering if you consider him of sufficient importance to give a bit of space in the next issue in which his material appears. I imagine some of the details of his life and work would be as interesting as the things about which he writes.

In any event, I want you to know that I, for one, find HYGEIA a most informative and interesting magazine, and am glad to report that this opinion is enthusiastically shared by many of my acquaintances.

FOREST B. BECKETT
St. Louis

▲

We Agree

To the Editor:

I have read countless numbers of magazines of all sorts and varieties, but I have yet to find one to compare with HYGEIA. This is, without any excuse, one magazine that should be in every home in the country. If any subject is more important than that of health, I would like to be informed about same; but I'm pretty sure you'll agree, there is no subject more important than that pertaining to the human body.

CLIFFORD W. BENSON
St. Louis County, Mo.

▲

More on Birth Control

To the Editor:

A letter on page 581, July HYGEIA, refers to an editorial in a previous issue on the subject of birth control. Perhaps my subscription did not cover the issue containing the editorial, so I missed it.

Based on over fifty-five years of observation and practice which included obstetrics and pediatrics, I am convinced that it is a physician's legal and moral right and duty to give parents needed health advice when a mother's health is declining and weak and when sickly children are the consequence of too frequent pregnancies, or when mental or physical health of either parent are such as to perpetuate disease or insanity in progeny, with consequent suffering and community expense.

I do not understand birth control, as advocated, to mean prenatal murder. If the above statement defines birth control, then those who oppose it might question their own consciences whether or not they might be opposing human welfare. I have had so high an esteem for the public health benefit of HYGEIA that I subscribe for it and, after reading it, give the issue to another. I have also made some gift subscriptions.

C. NYSEWANDER, M.D.
Des Moines, Ia.

▲

The Roadside Restaurants

To the Editor:

Only too often have we been "taken in" by attractive looking roadstands to our great regret and consternation later on, after we had already ordered our food. For this reason, I was greatly interested in your article on "How Safe Is the Roadside Restaurant?" by James E. Browell in the July number.

The author evidently had had somewhat the same experience and so had taken the trouble to find out from those responsible in each state just what was being done about it. Possibly his inquiry will bring action where none was before. The article itself should at least bring such deplorable conditions as one often finds into the consciousness of travelers, who may in turn bring it to the attention of the owners of

roadstands, who may do something about it! Many thanks anyway for the article.

SYLVIA M. PASSO

Geneseo, Ill.

▲

Camp Counsel

To the Editor:

I want to protest against articles like "Camp Counsel" which appeared in the July number of HYGEIA. Most reputable camps now are well organized and supervised and articles of this sort only tend to make normal parents fussy and hovering parents impossible. Camping is not only a physical experience but mental and spiritual as well, and I think that long discussions of this type tend to take the "bloom off the peach," as it were. The advice is all good in itself, but it should have been more concisely and amusingly administered.

MARY TROHERNE

Los Angeles.

▲

Page the Art Director

To the Editor:

I like the way you vary the use of photographs and drawings in your magazine, except I don't care to see them used together in one illustration.

R. T. GRUBBE

Chicago.

▲

Kudos

To the Editor:

Kudos to Kenneth P. Wood for "The Psychology of Loafing." If all movement in the world could be slowed down at least 50 per cent, how much happier and healthier we would all be. Do you suppose that Mr. Wood's bachelor life has any bearing on his opinions of loafing? I wonder! At any rate, more power to all devotees of loafing! Ho hum!

I. M. TIRED

New York City.

To the Editor:

This being a Sunday, a day when I must act as a watchman here at the Southeast High School from 6 a. m. to 6 p. m. I picked up a copy of HYGEIA, July issue, and finished reading your article on "The Psychology of Loafing." I wish I had read that when I took over this position.

All through the week I am an assistant engineer, and on Sunday I must act as a watchman. There is nothing to do only stay here and watch in case of theft or fire. That is why I have found time to read and I am learning to typewrite to use up my idle moments doing something.

Every year I get two weeks' vacation and I take my family, or rather they *"drag"* me away from the noise and din of the city, to a spot in the country, where there is nothing to do—*just loaf*. It is a pleasure to find time just to loaf on some river bank or where there is peace. All you hear is singing birds, with a beautiful sky overhead. I don't smoke, so I do not have "pipe dreams;" so all the time I am in the country you can hear me say, "Oh dear, I wish something would happen."

I am going to follow some of your tips on loafing on my next vacation and see if I cannot learn to loaf.

I am taking my vacation from July 26 to August 17th. Let me have more articles on the *psychology of loafing.*

LLOYD P. BLAIR
Assistant Engineer,
Southeast High School

Kansas City, Mo.

▲

Permission Granted

To the Editor:

The Professional and Service Division of the Kansas Works Progress Administration, sponsored by the State Board of Social Welfare of Kansas, are transcribing books, pamphlets and other material into Braille for the benefit of the blind in the state. Since the work is done by hand only a few copies of each publication are made, in most cases but a single copy.

We should greatly appreciate having your permission to transcribe into Braille, the following of your articles: "The Venereal Diseases" by Thurman B. Rice and "Eye Physicians, Opticians and Their Work" by Edward Jackson.

Please be assured that if permission is granted, due credit will be given the publisher, the author, the title and the copyright notice.

LEROY HUGHBANKS
Acting Director
Division for Handicapped Persons

Topeka, Kan.

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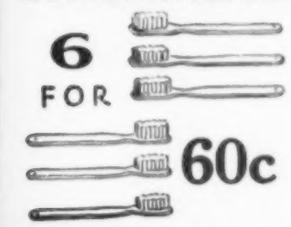

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Lillian May Garrison

Though I Am Fallen—

Though age and storm have laid my branches low
And my frail, hollow trunk reclines upon the earth,
Still I respond as seasons come and go,
Still know departing leaves of fall, and spring's rebirth.

Close to the meadow's breast, I shall drink deep
My share of sustenance that quickens every blade
Of grass and every leaf, that gentle sheep
May find a summer's haven in my cooling shade.

Though I am fallen, I rejoice to give
Shelter and shade as long as I shall live.

—By Nell Griffith Wilson

Pioneering in Cancer Education

By W. W. BAUER

THIRTY-FIVE years ago the American Medical Association recommended the appointment of a committee "for the collective and prophylactic study of cancer." When that committee was appointed no one would have dared to state publicly that cancer was curable when recognized early and promptly treated by appropriate methods. Today the statement is made with confidence on the basis of almost 30,000 proved cases. Indeed, the article by Isaac F. Marcosson on "Cured Cancer Clubs" in this issue of HYGEIA brings out the living proof of the fact.

This record has not been written by chance. Partly as a result of the impetus given by the interest of physicians, both privately and through medical organization, a definite movement for the control of cancer has been developed. The progress of this movement is reflected in the official minutes of the House of Delegates of the American Medical Association. A committee of the gynecologic section of the International Congress of Arts and Science held in 1904 was instructed to report to the American Medical Association at its next annual meeting and did so in 1905. Out of the report the portions of greatest significance to the cancer patient are its recommendations for "the education of the laity, especially the women" and for educative work "among the poorer classes by social settlements and other charitable organizations, and lectures or informal talks should be given to mothers on this subject by district nurses or by nurses at the head of hospitals who are provided with the necessary information." Cooperation with the American Federation of Women's Clubs was advocated and has since been developed.

In 1906 the American Medical Association's committee on cancer of the uterus recommended that "The American Medical Association is interested not only in reducing cancer mortality, but in similar work pertaining to matters of public health falling within its province. The needs of the hour seem to demand some ethical way of instructing the people in general regarding these several subjects." The substance of the recommendation was that a department of public instruction be organized by the Association. From this the Bureau of Health Education evolved.

The scientific sections of the American Medical Association and particularly the Section on Obstetrics and Gynecology and the Section on Surgery have always concerned themselves with cancer. The Council on Health and Public Instruction was organized and proceeded to function. In 1913 the House of Delegates endorsed the American Society for the Control of Cancer, and stated that "this movement deserves the cooperation of the medical profession of America . . . this Association heartily commends its worthy purpose." In 1914 the committee on cancer reported that special articles on cancer were being prepared for popular education, and the House of Delegates urged all members and Fellows of the Association to accord the committee on cancer the support and cooperation it asked. In 1915 progress in the preparation and distribution of pamphlets was reported, and the growing importance of the American Society for the Control of Cancer was recorded. Physicians were again encouraged to cooperate with the society and "to advise their patients to become members of this Association."

In 1916, the committee on cancer noted the growing interest of other organizations and, fearing loss of effectiveness from scattered and uncoordinated effort, recommended that the principal campaign against cancer be carried out by the American Society for the Control of Cancer but recommended continued interest and support by the medical profession.

The American Society for the Control of Cancer organized the Women's Field Army in 1936, thereby giving a new impetus on a national scale to the local efforts and to the continuous education by the medical profession. The medical profession, nationally and locally, continued to utilize pamphlets and magazine articles and to furnish speakers to lay organizations telling about the importance of early operation in the cure of cancer. *The Journal* of the American Medical Association and its special journals gave large amounts of space to scientific papers on cancer and devoted much time to its discussion at annual scientific assemblies. State and local medical societies did likewise.

In 1923 two new forces entered the cancer fight almost simultaneously. In this year commercial radio broadcasting became a reality, and the American Medical Association established HYGEIA, The Health Magazine. Through both these channels the medical profession has constantly held before the public the simple and fundamental truths now known about cancer: Cancer is always local at the beginning; it can be cured if completely removed in its local state; it is seldom painful in its removable stages, and there is more hope for its cure than is generally realized. Repeated radio talks and dramas stress the curability of early cancer. While taking full advantage of the new weapons, the older methods are not neglected. New pamphlets based on more modern conceptions of health education replace the original series. Speakers continue to appear before national, statewide and local audiences.

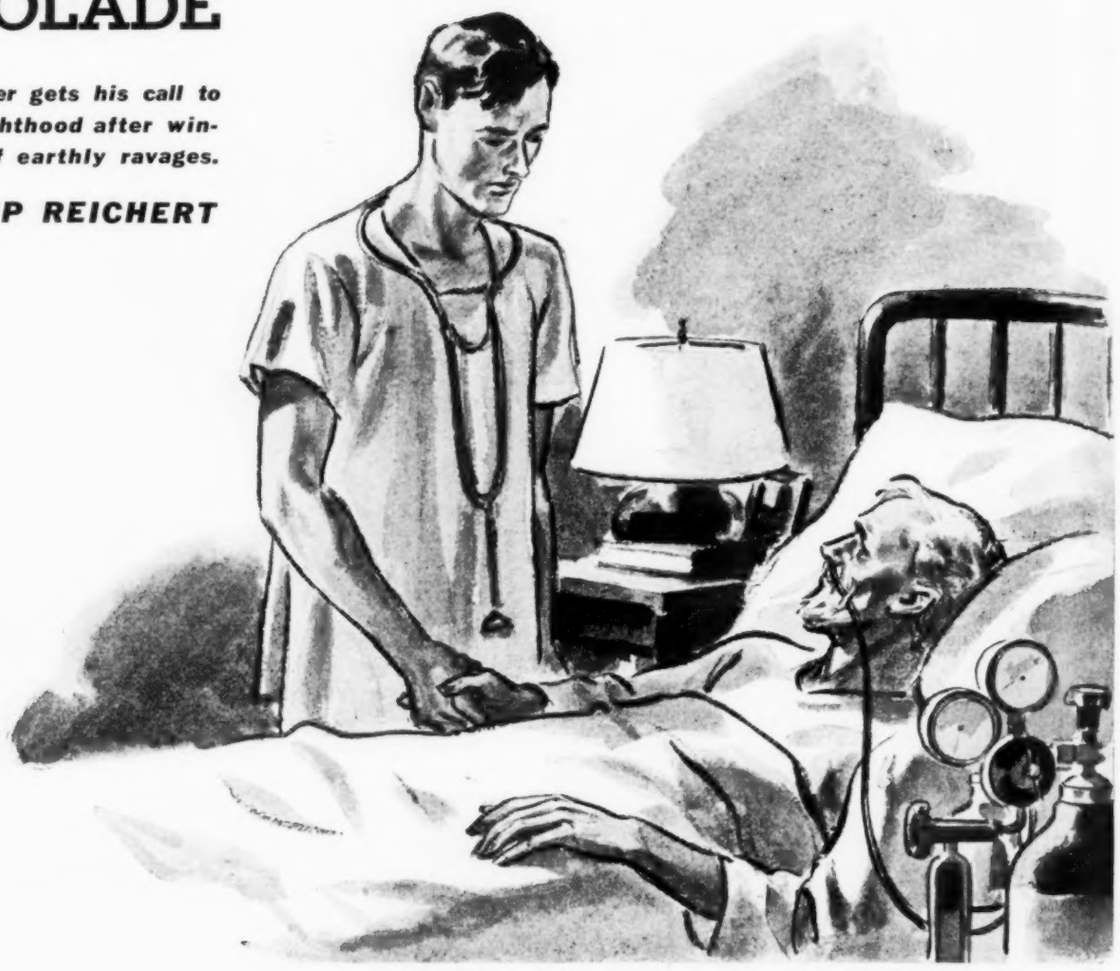
From the beginning the interest of physicians in popular education about cancer has been active. Many of America's leading surgeons, gynecologists, dermatologists, radiologists and diagnosticians, as well as specialists in several other fields have contributed their time and influence to public enlightenment.

There are always two potent weapons in a fight against any disease. These are first, scientific knowledge, and second, public enlightenment. As in the case of cancer, scientific knowledge need not be complete. Progress can be made by the application of existing knowledge on as wide a basis as possible. The fundamental cause of cancer remains unknown. There is no prophylaxis nor preventive of cancer except the avoidance of chronic irritation and inflammation. Yet in spite of limited knowledge there are almost 30,000 known cases of cured cancer and undoubtedly many not on record. Public enlightenment need not wait for the ultimate completion of the scientific record. As soon as there is enough practical information available, public education can precede. The medical profession, individually and collectively, personally and officially, has acted for public enlightenment on the basis of available scientific knowledge.

ACCOLADE

An old soldier gets his call to eternal knighthood after winning wars of earthly ravages.

By PHILIP REICHERT



Something of terror drifted from my soul as I felt that unrelaxing grip. There was a lifetime of calm assurance and steadfast leadership in those strong fingers clasped about my hand.

I WAS sitting at my little desk at the end of the darkened ward, writing case notes on the charts. I was firmly setting forth the dogmatic opinions that only a smug new intern fresh from the lecture halls could write. My shaded light threw the row of beds into a semi-darkness, and from out that half gloom came the noises of sickness at night—sighs and coughs and restless muffled groaning. There was the faint hospital smell, like stale disinfectant; it thrilled me. Older men never noticed it.

I checked over my cases: the gastric ulcer on a Sippy diet doing very well. Three diabetics, sugar free. Surgical consultation on the gall-bladder case advised operation—should have been transferred today, I thought; I would do it first thing in the morning.

Bed 6 is a new case: male, aged 67. Diagnosis: pneumonia, lower left, and right middle lobes; duration: ten days; complications: chronic arteriosclerotic and valvular cardiac disease. I read rapidly and competently, forming opinions and deciding on my night orders. There was the inner satisfaction of knowledge and ability. I was getting the hang of the routine, and medicine was my open book. Some poor derelict fished from the gutter, I thought, carried in by the ambulance net to the haven of the white ward for the healing power of a freshly starched and very earnest intern. I was here at last, at the very threshold of my dreams, and life and work were sweet.

I ruffled the pages of the chart and looked at the name, address, occupation—"physician"! There was a queer sensation inside of me for a moment, as though my insides had dropped. I shaded the desk light with my hand and peered down to where he lay. There were some oxygen tanks down there; the House had probably ordered them in the admitting office. I hadn't thought of that, and it was disturbing to see them. It gave my self confidence a little jolt. My heart beat violently, and I was nervous as I approached the bed. Shock of silver hair and

a straggly gray beard; his color was ghastly blue. A big gnarled hand lay on the coverlet, the fingers making futile gesturings. He was mumbling in his coma.

The night supervisor of nurses came by. I felt embarrassed, ill at ease. It had never been in the picture of my life that one of our lordly guild should end up as a charity patient, mumbling in cyanotic delirium in a free ward. I resented the nurse's knowing our shame. But she was sympathetic.

"He had an old card in his pocket," she said, "membership in some county medical society up in Maine fifteen years ago. There was no finding out how he came to be sick in a furnished room in West 16th Street. The people there didn't know much about him, but when he didn't come downstairs for a week, they called the policeman on the beat. That's how he got here. Dr. Martin said he hadn't been conscious. Don't you think we had better put screens around the bed? He'll probably go out tonight."

I had not thought of that either. The misery that came up into my throat was no part of a professional manner. I visioned that bed as the end of a road like mine. He had not seen this pauper's death when he had worn his cocky intern's uniform. The thing that crept into my bones was something I had not ever thought to feel, and even then I shrank from naming it. But as I shuddered in this Presence I knew that what I felt was *fear*. Here in my sheltered hospital I had been gloating over petty triumphs, and they were triumphs that were hardly mine. The House and the Attendings guided every step I took; I thought bitterly about that now. He had come in from the great field outside, had passed through years of that high combat that I dared not let myself picture too clearly. He had sat alone at many bedsides, calm and wise, easing pain, helping and lifting. As I stood by that old timer, I felt stripped of skill and knowledge, of pride and courage. I had seen that outside as a place of sacrifice and toil, of long work and hard won honor—but always with success, with triumph, with ultimate peace. Here was a reality that struck terror into my callow soul. For all my dreams, for all my vauntings, here on this bed was I, gasping and blue, mumbling and alone at the end.

The orderly had brought the screens and a chair. I wilted into the seat, grateful for the screens; I wanted to grapple unseen with this unrest. I might have gone over to my quarters, but I had to stay there out of some insane notion that I dared not desert him—lest in some far distant day I too might gasp alone. I wanted to call the House, but I feared his bluff ridicule.

The ward drifted far away from our island behind the screens; he and I, dying veteran and untried novice, death clutching at his throat, terror and misery clutching mine. I leaned over and straightend the oxygen tube in his nostril; I could hear what he was saying. He thought himself at the bedside again, and I caught fragments of his words.

"Easy now, we'll fix that for you, man. Try some of this. Sure, sure, it hurts, I know. Take some of this." There was a compelling earnestness in that hoarse whisper. I leaned closer and felt his pulse. His fingers closed over my hand in a full handclasp, "That's it, boy, you hold on to me, and don't worry." The skin pricked along the back of my neck as I listened. He continued. "I'll stay right here with you until you are better. You can hold my hand. Sure, sure," reassuringly "I won't go away. You just get some rest." The hand was big and warm and moist, as were my eyes as I gulped a sob. And I did not draw my hand away as I gradually sank back into my chair.

I waited there. Something of terror drifted from my soul as I felt that unrelaxing grip. There was a lifetime of calm assurance and steadfast leadership in those strong fingers clasped about my hand. The breathing seemed easier or did I merely think so? The hoarse whisper came less frequently; but the words were always the same, "You just hold onto my hand; I'll stay right here until you feel better." I was content as I watched his face, his even breathing. The ward was quiet. My tremor gone, my lids were heavy with fatigue. His white hair seemed bright. I think that wan face smiled. A peace came over me, and something of new courage glowed within me. It did not seem defeat now that he should lie there, dying at the last, even as many had died while he had fought their fight. There was a glow about that bed, a glory of Him who had died in lowly shame for love of frail and broken creatures. In that strong handclasp I felt kin to Him who had healed the leper and the blind and raised the dead that they might walk again. He lay there shining and straight, and there flowed into me the courage and the love to keep unsullied the high calling of the healing priest, nor reckon the cost, nor fear the end. It was a "laying on of hands," a mystic consecration to carry on, to have no fear. We seemed transported, he and I, far from that dim ward of pain, hands clasped in a holy fellowship. . . .

A distant phone bell rang, and a tray clattered. I stirred stiffly in my chair. Some one must have thrown a blanket about me. It was dawn, and the hand within my grasp was cold.

It's Smart to see well!

By CONRAD BERENS

BECAUSE wearing glasses is sometimes considered undesirable, for cosmetic or other reasons, much has been written to convince the layman that better vision may be obtained without them. These writings lead many people to believe that glasses are sinful inventions and that the eye physician is narrow-minded and prejudiced against supposedly great discoveries, which eliminate the necessity for glasses. The unscientific statement that vision can be improved by looking directly at the sun is characteristic of the more obviously dangerous claims that have been made. It is well known that several cases of blindness have resulted from observing a solar eclipse without wearing smoked glasses.

In this brief discussion, I will explain why many of the extreme statements concerning eyeglasses made by persons without medical knowledge are unwarranted, and I will show why glasses are needed in some cases; while in others they may sometimes be avoided or worn only for certain purposes.

Glasses are worn mainly for four purposes: (1) to see better; (2) to relieve eyestrain; (3) to protect the eyes and (4) for cosmetic or psychologic reasons.

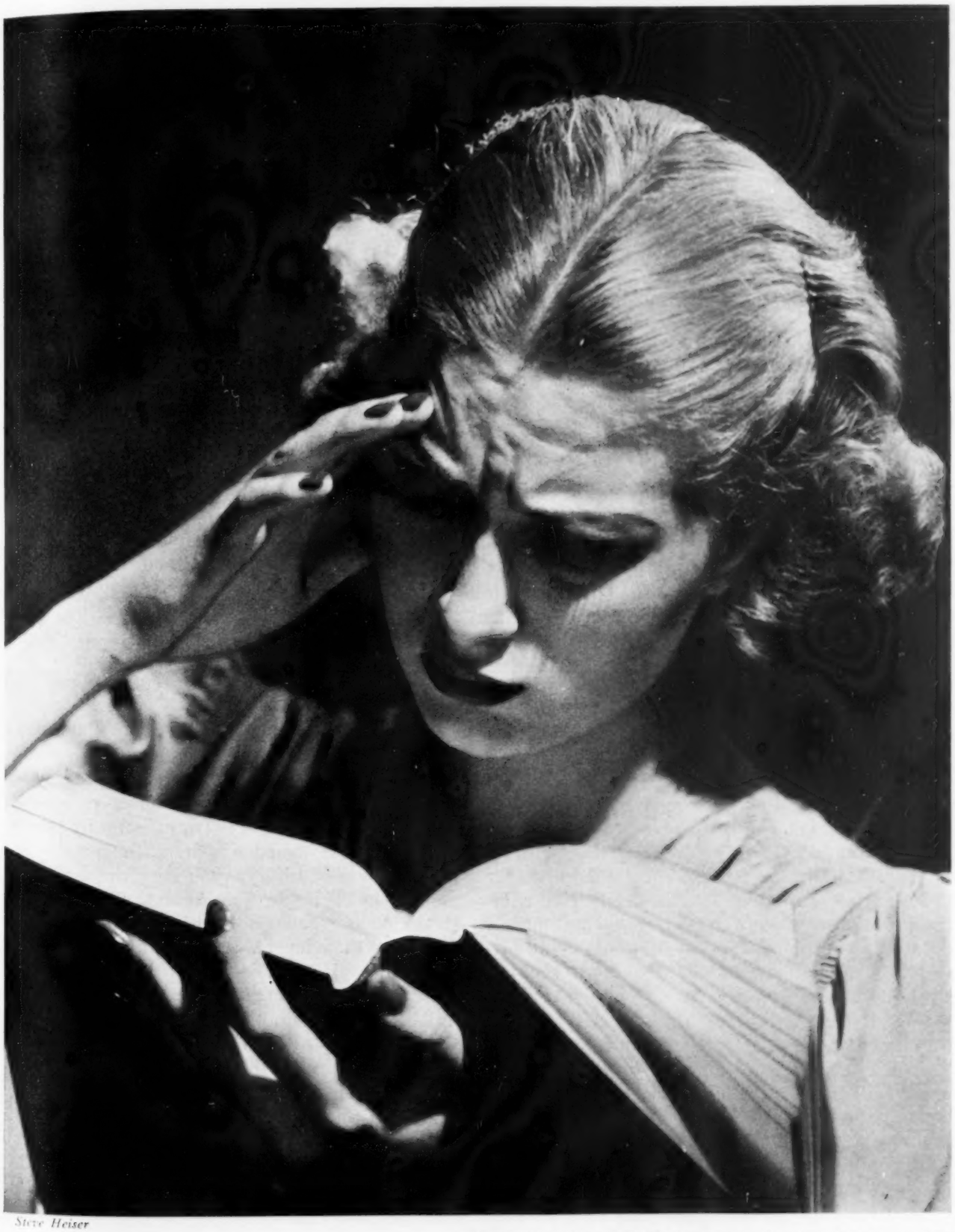
The use of glasses to see better depends on several factors. If a person is slightly nearsighted and does not care particularly about seeing well, glasses are not essential. Whether he can do without glasses all the time depends to a great extent on the type of person he is. If he is the temperamental, highstrung type who must see clearly all the time and who, intentionally or unintentionally, squints and strains to see distinctly without his glasses, then he must wear them constantly. If, on the other hand, he is an amiable, easy-going, placid or even a phlegmatic individual who accepts blurred vision passively as the price he pays for going without glasses, he can usually use his glasses or not as he desires.

Some of the more common eye defects which produce eyestrain and poor vision and which may be relieved by the use of proper glasses or other measures are: nearsightedness, farsightedness, distorted vision (astigmatism), unequal images in the two eyes, faulty near vision in middle age and muscular disorders. In order to have a clear understanding of these conditions, I shall briefly explain the fundamental principles of the mechanism of seeing. Sight is produced by means of light rays reflected by or emanating from the object observed, and they are focused in the form of an image on the interior seeing coat of the eye, the retina. If these light rays do not focus properly, the image formed on the retina is blurred, and glasses may be needed. A clear and definite image is formed if the length of the eyeball is normal and if the surface of the eyeball and the focusing device of the eye, the lens, are properly curved.

In nearsightedness, the eyeball is usually too long so that the rays focus in front of the seeing coat of the eye. For high degrees of nearsightedness, it has been scientifically determined by the eye physician that glasses are essential for good distant vision. One of the greatest sources of income for the charlatan is the supposed cure of nearsightedness without glasses. Nearsighted persons can seldom permanently discard their glasses if they wish to see distant objects clearly and if they are performing specific tasks during which strain becomes manifest.

If the nearsightedness is accompanied by disorders of the eye muscles and the patient experiences unpleasant symptoms, exercises of the eye may make the patient more comfortable without his glasses, even though he may not see clearly. Because the tendency for images to double is lessened, the patient may see with less confusion, but the shape of the eyes is not changed. If the patient can actually see more letters on the vision-testing chart, it is either because there has been a spasm of the internal muscle of the eye, which has become relaxed, or the normal growth of the eye has reduced the amount of nearsight.

If the eyeball is too short for the rays to focus on the retina, the condition is known as



Steve Heiser

The muscular effort exerted by the eyes in the attempt to correct their astigmatism is ineffectual and will often be a source of great discomfort.

farsightedness. The effort made by the eye muscles to focus these rays may cause marked strain. In farsightedness, distant objects can be seen fairly well so long as the focusing device of the eye is not weakened by age or disease; but looking at near objects may cause a definite strain. For the correction of farsightedness, glasses are used partially to focus the rays

before they enter the pupil. The lens should then be able to focus the image on the retina without undue strain. In farsighted persons, especially children, the wearing of glasses may prevent the development of muscular strain and crossed eyes, particularly turning of the eyes inward. A young person, who is farsighted, may sometimes by muscular effort overcome these defects without serious strain, even though glasses are not worn; his health must be good, however, the light adequate and his eyes unabused. But, with advancing age, it becomes increasingly difficult to make necessary adjustments by muscular action, and glasses may be required even to see distant objects clearly. Near objects become indistinct earlier in farsighted individuals than in persons with normal eyes. The wearing of glasses is necessitated not because the muscles are weaker but because the focusing lens in the eye can no longer change its shape. Conditions accompanying farsightedness are often helped by means of exercises, and glasses may not be required for constant wear unless unpleasant symptoms develop or the eyes tend to cross.

In order to obtain clear vision, the curves of the window of the eye out in front and the focusing lens must be spherical. Irregularity or inequality of these curves is termed astigmatism and produces a distorted image on the retina. The muscular effort made in the attempt to correct astigmatism is ineffectual and will often cause great discomfort. If the amount of astigmatism is not great, it may be unnecessary to wear glasses constantly or even for near work, unless the tasks are prolonged, the print is unusually small, the patient is fatigued or ill, or illumination is inadequate or faulty. Eye exercises sometimes seem to relieve symptoms of eyestrain complained of by patients with farsighted astigmatism, and some actually seem to see better.

The faulty vision of middle age usually becomes apparent between 40 and 50 years of age. Objects to be seen clearly are held farther away because of the inelasticity of the focusing lens in the eye. If care is exercised in using the eyes, the wearing of glasses for faulty near vision of middle age sometimes may be postponed. Persons reaching middle age should hold their work as far from their eyes as they can with comfort and relax their eye muscles by looking away from their work at frequent intervals. If they read in bed, illumination should be sufficient, and the head should be elevated. With advancing age, the strength of the glass required for close work usually increases. For some patients, two-vision, or bifocal glasses may be necessary; the upper part of the glass is used for distant vision and the lower half for near vision. Although many claims are made by charlatans that they are able to cure faulty near vision of middle age without glasses, the inelasticity of the lens which produces this condition can neither be cured nor aided by unscientific exercises.

The patient's ability to adjust his eyes may sometimes be improved by massage around the eyes and even massage of the eyeballs, when this is not forbidden because of hemorrhages in the eye or other conditions. Improvement is particularly marked in patients whose eyes have been weakened temporarily by overwork or illness. Certain exercises for the internal muscles of the eyes, alone or combined with exercises for the external muscles, accompanied by treatment for improving the circulation of the eyes, in some cases seem to increase the patient's ability to read fine print.

If the images formed in each eye are unequal in size the condition is known as aniseikonia. Special lenses may be prescribed to equalize the size of the images. Although some patients who wear these lenses claim to be benefited, there are many factors to be considered in evaluating treatment. Therefore, physicians are maintaining a conservative attitude in regard to reported cures.

Another cause of eyestrain lies in muscular disorders. Not only does each eye have to focus rays on the retina, but both eyes must be turned toward the object to be observed in order to prevent discomfort from actually seeing double. If the disorder is slight, the patient may be able to hold his eyes together in performing most tasks. If the eyes are placed under unusual strain or the general health is impaired, they may tend to separate, resulting either in blurred or double vision. To perform the simple act of seeing, twelve muscles which move the eyes must work in harmony with each other and with the focusing apparatus inside the eyes. This ideal state permits the most comfortable use of the eyes, and it is to aid in the attainment of this ideal that glasses are usually prescribed by the eye physician.

In the treatment of crossed eyes or of less evident disorders of the eye muscles, eye exercises or, more scientifically, orthoptic training, are often of value. This form of treatment is carried out by physicians, eye clinics and hospitals. So-called blindness from disuse, which is a result of crossed eyes, can be prevented by the proper treatment of the eyes, that is, wearing the proper glasses, and then forcing the use of the eye that is *(Continued on page 748)*

Black Box

Women enter a new physical phase of their lives at about this age, and they often encounter new problems.
ELMER L. SEVRINGHAUS ***answers all their questions and sets them at ease in—***

A WOMAN FACES FIFTY

ALTHOUGH we are being assured that "Life Begins at Forty," many women feel that it would be more truthful to say that life presents new problems in the forties. Some of the rather unexpected by-products of the recent and intensive study of the glands of internal secretion have made a dramatic contribution to the solution of these problems. No longer do women have to suffer the mental and nervous torture of readjustment, which is such a common difficulty at the time of the menopause. Thanks to medical research, physicians everywhere are able to help women to a comfortable passage through these traditionally hard years. The understanding of the bodily and mental changes involved and the gland products which may be required for treatment in some cases are now available through a prescription by the doctor.

In the first place, it may be advisable to sketch the physical picture back of the difficulties of the "forties." Women often ask why the "change" takes so long. "Why doesn't the sex function merely stop?" they ask. We must recall that it takes years for the sex organs to be matured and securely established. The sex glands of small children are not entirely inactive, although they function rather little during the first twelve to fifteen years of the child's life. Then there comes a period of dramatically striking evolution from childhood through adolescence to maturity; but even this development requires several years for its completion. We often make the mistake of thinking that maturity has been achieved when puberty is recognized. Really, this is but the evidence of an acceleration of the maturing process. The youth, as well as his parents and friends, may become conscious of the physical and emotional changes, which together are called adolescence. This is also a "change of life" and is frequently the time of many painful emotional experiences. The wide interest in education and recreation during the last several decades has

Black Box

done much to improve the lot of the young people who were having difficulties. The present discoveries in endocrinology are beginning to make available still further assistance to those unhappy adolescents whose development is retarded or in some fashion asymmetric. But fortunately, almost all children will in time come to a healthy maturity, if patience and a bit of understanding are in evidence.

The active period of the woman's reproductive system continues for about twenty-five years. Emotional and physical intensity are not markedly different in the third and fourth decades. But in the forties the vigor of the sex organs begins to decrease, at first gradually and then with increasing speed. In women this process becomes evident by alterations in the menstrual flow, which eventually fails to appear. Excepting for this obvious difference, the features of the readjustment period are essentially the same in men and women. Physicians call the period under consideration the "climacteric." They are coming to recognize that it occurs in men in all fundamentals as it does in women, although on the average perhaps ten years later. The climacteric is often merely a quiet cessation of activity of the sex glands, with the emotional life of husband and wife persisting with growing happiness for the rest of their lives. However, many individuals undergo a few weeks or months of discomfort with unpleasant hot flashes, curious sensations of many kinds, difficulty in sleeping and emotional instability. Some men and women find added to these complaints persistent worries and morbid depression of spirits, leading to the dread of oncoming insanity. It now seems evident that all these difficulties are temporary and will vanish in due time, unless there are other contributing causes to make them persist. The mere assurance that the climacteric troubles will not last is worth much to those who feel that their sufferings are interminable. But more definite help is now available for women, and it may not be long until the same assistance can be offered to men. For the present, attention must be directed chiefly to the disturbances of women and the treatment they require.

Most of these complaints seem minor matters, except to those women who are trying to endure them or their effects on disposition, personality and capacity. To a certain extent, the kind of difficulty a given woman experiences will depend on her mental and physical condition.

The correlated activities of the ovaries and the uterus in the sexually mature woman include periodically a highly specialized preparation for pregnancy. After the development of a single ovum, or egg, this tiny cell is released from the ovary in order to make possible its union with the sperm cell. When this meeting occurs, the ovum is fertilized and achieves the ability to develop into the body of an infant. But for this process of months of growth, the fertilized egg must have an assured food supply and the safest of protection in several other ways. To supply just these conditions, the uterus has been evolved. At different times this organ has different functions to perform. It is not always ready to provide the best of hospitality to the fertilized ovum.

In order to time these processes properly and make sure of thorough preparation, the ovaries provide two hormones, or internal secretions, which act as the governor for the condition of the uterus. Just as several tools must be used in a proper sequence for the preparation of a fine garden soil, so these hormones must act one after the other to make the delicate preparations for the implantation of the fertile seed, which is destined to develop in the uterus until the infant is ready for birth. This seed bed is so delicately adjusted that it cannot be kept ready and waiting indefinitely. If the egg is not fertilized and delivered for implantation at the appropriate time, the uterine lining is cast off and washed out, to be followed by a repetition of the whole process from the beginning. This casting off of the lining is called menstruation, because it occurs about once each month (*mensis* is the Latin term for month). Menstruation is therefore an evidence that the process of fertilization and implantation failed to function in the preceding month. It appears a bit wasteful, since the body repeatedly casts away such highly specialized material. Most lower animals reabsorb this material and use it over, without such extravagance. There is no good reason to consider menstruation as a means for getting rid of poisons. A woman may remain in otherwise good health for any number of years without menstruating.

And yet it is wise for any woman who finds her periods irregular or changing in any way to consult her physician. There are a number of ways in which this rather intricate mechanism may become disarranged. The smooth operation of the monthly cycles depends on several glands in addition to the ovaries; these

include the pituitary, the thyroid, the adrenal glands and the pancreas. Since the balance among these numerous factors is so nicely adjusted, it is possible to upset it by any one of a number of troubles. Thus, menstruation is likely to be disturbed by infections such as influenza and even more so by tuberculosis or by anemia, inadequate diet, marked obesity, diabetes or certain types of goiter. The absence of the usual periods is never a *cause* of these diseases; the opposite is more often true. Since regular menstruation is one of the most sensitive indicators of good health, any disturbance of the flow may be the first signal that the woman needs medical attention.

In consulting a physician, women should welcome the attention of the doctor who makes a careful examination of the pelvic organs. Without this it would be impossible to detect at an early date infections and growths which may have to be removed. Some infections may be bothersome but not at all dangerous; others may cause only a little present complaint but hold a real threat of future ill health. Similarly, there is a large number of women who have tumors or growths in the uterus or ovaries; but only a small proportion of these tumors are cancers. Sometimes it is wise to remove even the less dangerous tumors. These problems require the judgment of a wise physician, experienced in the study of the diseases peculiar to women. Whenever the periods change in character, and especially at the menopause, every woman owes it to herself and her family to have a careful examination by her family doctor. If he has any doubt about her condition he should be only too eager to have the assistance (in consultation) of a specialist in gynecology. By combining skilful obstetric care with early examination when changes occur, women can avoid the dangers of cancer to a large degree.

Whenever the ovary of an adult woman fails to furnish the normal supply of hormones, marked changes appear. Such failure occurs in the natural course of events at the climacteric. Or it may occur as a consequence of the removal of the ovaries by surgery or radium at any time between adolescence and the natural menopause. There is no essential difference between the disturbances occasioned by the natural and the induced climacteric. There are, however, a great many types of reaction to the menopause. Perhaps the complaints are as varied as the types of women. To a certain extent, the kind of difficulty which a given woman experiences will depend on what kind of a body and mind she has. Small troubles will be greatly magnified. Sensations which were formerly unnoticed now become actually painful. Trifling irritations become so vexing that they seem intolerable. Women undergoing this period of readjustment are apt to think that their families and friends are hard to get along with, and certainly the perplexed families and friends echo that feeling about the woman in question. But no woman is to be blamed for this change in her personality, since she cannot help feeling as she does. Of course she may exercise self control in her contacts with others, if she understands herself. This self control has always been possible to many women. But in some cases the discomforts are so marked that no amount of self control is sufficient. Fortunately, medical science can now help these suffering women safely and comfortably through this period by using the recently discovered hormones of the ovaries. It was formerly thought necessary to use sedative drugs to quiet such disturbances. The new preparations of the ovarian hormones are not sedatives and may be used without the disadvantages and dangers of certain drugs. These hormones help the body to reestablish its balance.

The most common complaints of women in the menopause include the familiar hot flashes, unexplained itching or peculiar skin sensations, nervous irritability and difficulty in sleeping. The hot flashes may be visible or not; they may be followed by sweating or chilliness or may just vanish. The flashes may last for a few seconds or for half an hour. Their frequency varies from every few minutes to every few days. These temperature changes are entirely on the surface and are not due to fever. While not dangerous in the least, they may be embarrassing or extremely annoying. Occasionally, they may be mistaken for the evidences of some real disease, but the presence of the other manifestations of the menopause serves to avoid this error when the condition is referred to the experienced physician.

The skin sensations are also of wide variety. Many women are ashamed to mention that they feel as though insects are crawling on their arms, but they see none when they search. The disturbance is of course in the nerves, not on the skin. Sleeplessness is more serious, since loss of rest makes each day harder and harder. The common reports are of lying awake for a long period after going to bed and of waking and being unable to return to sleep. Frequently, women seem to waken about 2 o'clock and think they are unable to sleep again until daybreak. Perhaps this is not an unbroken period of wakefulness, *(Continued on page 752)*

NEW BRAINS for OLD

By ORVIS C. IRWIN

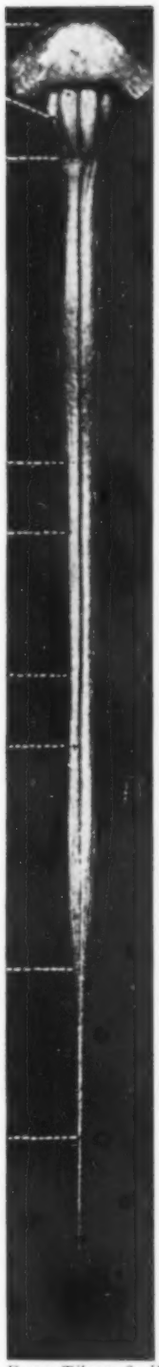
IN A recent book Crowell said a baby is an alimentary canal with a howl at one end and a diaper at the other. But a baby is a Bach choral. His nervous system is a little symphony in protoplasm. Our task is to catch a glimpse of how that superb melodist, nature, composed it.

When in the dim beginning of things, carbon, nitrogen, oxygen, hydrogen, seasoned with a pinch of salt somehow got together in the form of a colloid, or jelly, enclosed in a semipermeable membrane, protoplasm became a new thing in natural history. It is the stuff all organisms, including little girls, are made of. It is the material composing the most complex organization of the whole animal kingdom, namely, the gray matter of the brain; and it is this gray matter, or cortex, which supremely makes man a man. The rest of him the apes have. So in a sense does the ameba. An ameba is a single cell of protoplasm. Although he does not have bones, muscles and nerves, the ameba manages to perform the duties of these structures by means of his single cell. Let us get this clear. The lower undifferentiated organisms exhibit all the simple functions characteristic of protoplasm. The ameba may not perform them as intricately as more developed animals, but for purposes of survival he does an excellent job.

A peculiar outcome of development is that different parts of protoplasm take on special functions. In modern industry this is known as the division of labor; but it was worked out protoplasmically an eon or two before Adam delved and Eve span. Some protoplasms are specialized as supporting tissues for the whole organisms; others specialize on carrying external influences to various parts of it, others on shortening or lengthening themselves, still others on commissary and disposal. These functions in a complex animal are divided up among different protoplasmic structures, skeleton, nerves, muscles and so on.

How these structures developed is really an exciting story, if told well. The most interesting of them all for understanding human nature is the nervous system. The ameba gets along without one. The earthworm has a queer one which looks like a ladder. It is composed of two long strings of nerves running down the length of him with cross pieces every so often. At the head end of the ladder are two knots for a brain. Amphioxus, that drunken gnomic wanderer of the seacoast, has a single cord of nerves running up and down the center of him with smaller strands extending back and forth to the muscles. He, too, has only a trace of a brain, but he is important because he laid down the plan after which man's nervous system is arranged.

When the touch of an external object presses on the skin of Amphioxus, a chemical change in it is aroused. This disturbance on the outer part of Amphioxus is propagated along one or more nerve branches until it reaches the cord in the interior. From here, it is again dispatched to a set of muscles. Up to this point these chemical changes in nerves are called an impulse. In turn, chemical disturbances or changes are aroused in muscles, exciting them to contract or lengthen, pulling the little fellow this way or that. The muscle is a neat device for changing chemical energy into a mechanical energy which does work, just as a motor is a machine for changing electrical into mechanical energy. The only difference is that one is organic and the other inorganic, which may or may not constitute a real difference. Nerves, then, are specialized kinds of protoplasm which transmit chemical



From *Tilney & Riley*

The spinal cord of man is one of the four main structures of his nervous system and is composed of the nerves that operate his muscles.

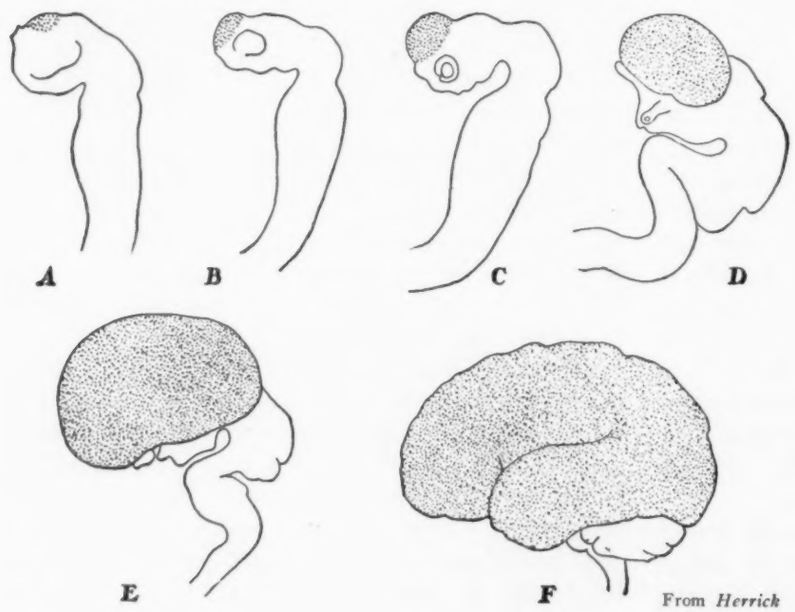
changes from one part to another of the organism and thus control the action of muscles, which in turn are specialized kinds of protoplasm to do work on the bones or levers of the body. Nerves and muscles, therefore, are protoplasmic devices which function to control the activity of the whole organism.

As the system of nerves becomes more numerous and organized into subsystems, the more complex will be the control. Now as you go up the evolutionary scale from Amphioxus, this is exactly what happens to the nervous system. Each phylum, or division, adds a new complexity. The astonishing thing is that the cortex, nature's summum bonum, was contributed, believe it or not, by the reptile. Indeed, it wasn't much of a cortex, merely a small patch of gray matter concerned with the singular business of odor; but it was a new departure, a new type of brain. The fish and the bird made some modifications in it; but the mammals, especially the monkeys and apes, the latest animals to appear in natural history, did a beautiful job with it and gave it to man for its further perfection.

Now neurologists make a distinction between animals whose brains are covered with cortical layers and those whose brains are without them. The distinction is in terms of an old brain and a new brain. The old brain is everything except the cortex and its projections to other parts of the nervous system. The cortical system constitutes the new brain. The words old and new are used in an evolutionary or a phylogenetic sense —late or early in natural history.

This distinction is important for us, because the newborn babe is an old-brain organism. And this fundamental fact explains more about him than you think. It does not mean, however, that the cells which compose the infant's cortex are not present. They are, every one of them, but they are immature cells which will take more than a year after birth to mature. Let's say this accurately: The neonate is functionally a noncorticate organism. The evidence for it is pretty conclusive, and the little against it is not very convincing. Albrecht Peiper, the peer of all those who work on problems of infant reactions, has subjected the evidence to a searching examination, to which he has added excellent experiments of his own. His conclusion is that the newborn is either a thalamic or at best a globus pallidus organism. These are big words for the simple statement that the cortex at birth is functionally unrelated to the structures lying beneath it. Thus, the evidence stands today until further notice from newer and better experiments.

In order to simplify our understanding of a fearfully complex structure, think of a plant growing in your garden. It has a long root which sinks deep into the soil. There is a stem which supports a fairly large-sized bud or head, which is just about to open. If you can picture an ordinary cabbage, it will help, only disregard for a moment the leaves which flare off from the stem. The spinal cord is the long root which extends down the length of the trunk of the animal's body; the brain stem is the upper part of the root found just above the neck region. The brain rests on the stem in about the same way the cabbage head is supported by its stem. Now if you will cut off the drooping leaves and fold them layer on layer over the top of your cabbage, that will represent the layered cortex, the gray matter. And this, by the grace of nature's vegetable garden, is a crude analogy, but a helpful analogy none-



From *Herrick*

Sketches of side views of the human brain at different stages of development to illustrate the relative extent of the cortical area (stippled). The ages of the prenatal stages (A to E) are approximate. A, 2 weeks; B, 3 weeks; C, 4 weeks; D, 8 weeks; E, 6 months; F, adult.

theless that will aid in the understanding both of babies and dictators. It does not tell you much about the inner organization of this structure, but then neuroanatomists [persons who study the anatomy of the nervous system] don't know all about that either. At this moment all you need to know is that there are roughly four main structures to the nervous system: the spinal cord, the brain stem, the hemispheres and the layered cortex on them. These are the bases for the nervous system.

The next things we need to know is that the spinal cord controls the muscles of the trunk and limbs, as well as the internal organs by means of nerves which run back and forth between them. The brain stem exercises a degree of control over the spinal cord; the hemispheres and a little adjunct body behind it, the cerebellum, exercise some degree of control over these. Finally, the cortex controls all the subsystems. The higher structures control the lower ones by long nerves growing down through the spinal cord and connected to nerve bodies embedded in it. This is the way too that the cortex is connected with each of the substructures. The cortex also contains cell bodies, some of which are wedge shaped and look like pyramids. The long nerves or tracts extending down from these pyramidal cells through the hemispheres, through the brain stem and as far as the lower part of the spinal cord are called pyramidal tracts. They are the longest nerves in the body and in many respects the most important, because by means of them the cortex unifies and controls the activities of all parts of the whole organism.

To summarize it: The muscles are innervated by nerves from the spinal cord. All control of the muscles coming from the higher parts of the central nervous system is exercised indirectly through the spinal cord. Now we are ready to talk about an instructive experiment which reveals the functional relation of the new brain and the old brain.

Alfred Adler wrote an important book on "Understanding Human Nature." He didn't consult the ape. The ape can tell us much about human nature. So can butterflies, earthworms and salamanders. Right now, we are concerned with a significant brain operation on an ape. The operation exposed the brain stem in such a manner that an area both of the old and new brain could be manipulated. Don't forget, the pyramidal tracts from the cortex pass like a thick conduit through the brain stem on the way to the spinal cord. So the situation is this: At the cut surface of the brain stem there is a cross section containing an area which represents the new brain and beside it an area which is the old brain.

When either area is touched with a probe, something happens to the ape's arm. If the new brain area is touched by the probe, the arm is raised. Remove the probe, and the arm drops. There is no continued raising of the arm when the stimulus ceases. This is significant. If, however, the old brain is stimulated first, the arm is raised and held up stiffly. When the probe is removed, this stiff arm posture is maintained for some time. If the exposed new brain area is then touched, the arm falls to the side. This can be repeated with the same effect each time. Trivial, isn't it? And silly, as silly as tickling the sole of a baby's foot; but it tells us some things very fundamental about the nervous system and also something basic about human nature. It tells us that the old brain controls the postural activities of the organism and, what is more, maintains these postures steadily. It also tells us that the new brain, or the cortex, at one fell swoop is able to wipe them out. The new imposes its sovereignty on the old; it readily inhibits the activities of the old. Now inhibition plays a hugely important role in man's cultivated civilized life. Without it you wouldn't have table manners. When the old system is released from control by the new, we revert to something less than our peculiar human endowment. It is the difference between a connoisseur and a glutton, between Plato and an idiot, or Ariel and Caliban.

There is another fundamental fact about ourselves suggested by this operation on the ape and substantiated by many other similar experiments. It is that every act of our waking lives, every skill, every highly refined motor accomplishment takes off from a postural background. There are still other experiments which show that all our higher functions, our thought processes, our creative endeavors—in short, *all* the functions of the new brain operate on an underpinning whose innervation is furnished by the old brain.

It has been said that there are experiments which are works of art. One of them is the operation which cuts open, or transects, the nervous system. This method, together with an amazing body of information concerning neural functions derived by it, is one of the crowning glories of modern science. The effect of a transection is to cancel the influences of the structures above the cut, which normally dominate the functions of those below it. Obviously a transection may be made at any point in the neural axis. When it separates the spinal cord from the brain stem, *(Continued on page 750)*

PRENATAL CARE for FATHERS

***The lament of a father who knows the fallacy in the theory, "What they don't know won't hurt them," as expressed by* EDGAR A. GUEST JR.**

THE strangest thing that has happened to me since I became the father of a boy some four months ago is the change in my sense of humor.

I have heard that fatherhood—or rather the experience of becoming a father—made strong men weak and weak men weaker; but I am not so sure this is true. In my case the change has been entirely mental. Physically, I am still pretty much the same wreck as in the pre-diaper days; mentally, I am altered.

There was a time in my life when I could get a laugh out of anything. Stories of fathers pacing hospital corridors while waiting for heirs or heiresses used to double me up; tales of the delivery room (most of them off-color, I'll admit) were rated as "killer-dillers" in my book; in fact anything in the line of alleged humor based on the antics of man about to become a father could be counted on to send me rolling in the aisles.

But today I am the soberest of men when one of the boys says, "Have you heard the one about the guy who had quadruplets, and when the doc told him. . . ."

For me such stories have lost their charm. When obstetric jokes begin, I either block my ears, walk away or start up a counterbarrage with a limerick. To me, there isn't an iota of humor in the situation of a father waiting to be informed as to the nature of his future responsibility; there is nothing funny in the long hours he puts in while the "men in white" are wrestling with his wife; there is nothing funny in his reactions when the thing is finally over.

I blame the doctors for the warping my sense of humor has undergone. I think the doctors place too much stress on the care and feeding of the expectant mother. I think they are wrong in dismissing the expectant father with a flick of the wrist.

This observation is based on the fact that my wife's sense of humor is just the same as it

was before she went to the hospital. She doesn't wear the worried look that has caused me to be dubbed "Persimmon-Puss"; she doesn't shy away from talk about having babies—in fact she seeks it; she doesn't shudder, turn cold and perspire ice water when the talk turns to labor pains. Why not? Because having Edgar A. Guest, III, was a breeze for her compared to what I went through. The doctor saw to that. He gave her all the pills and left me out in the cold to battle as best I could.

He didn't put me to sleep with a shot in the arm; he didn't assign a nurse to hold my hand or place cool hands on my brow, and he didn't build up my constitution for nine months!

That's the whole thing in a paragraph. Doctors apparently don't think that the father-to-be has a heart that burns or a stomach that jumps around before the baby comes. They don't think that we have difficulty swallowing our breakfasts or that our nerves reach such a state of degeneration on the home stretch that we scream out loud whenever the telephone rings or break into tears if some one speaks sharply to us.

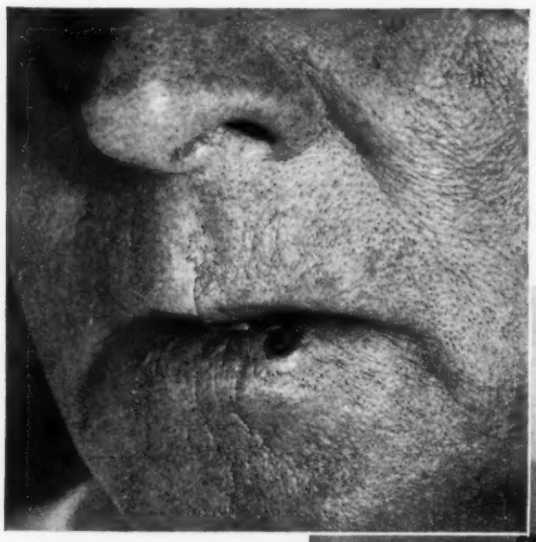
If I had known that every muscle and nerve in my entire body (and that's covering a lot of territory) would sag in the middle like an old garter and ache like all-get-out when the ordeal was over, I would have set a precedent by insisting on prenatal care of some kind. If I had known that having a baby would make it impossible to down a Scotch and soda for twelve hours I most certainly would have demanded that medical science provide some remedy.

There is no question but that the fault lies with the doctors. They don't tell the fathers-to-be enough about the facts of life to prepare them for the experience. I don't know whether they keep this information back because of a lack of faith in the father's ability to comprehend or whether they work on the "What They Don't Know Won't Hurt Them" theory. In either case, they're wrong.

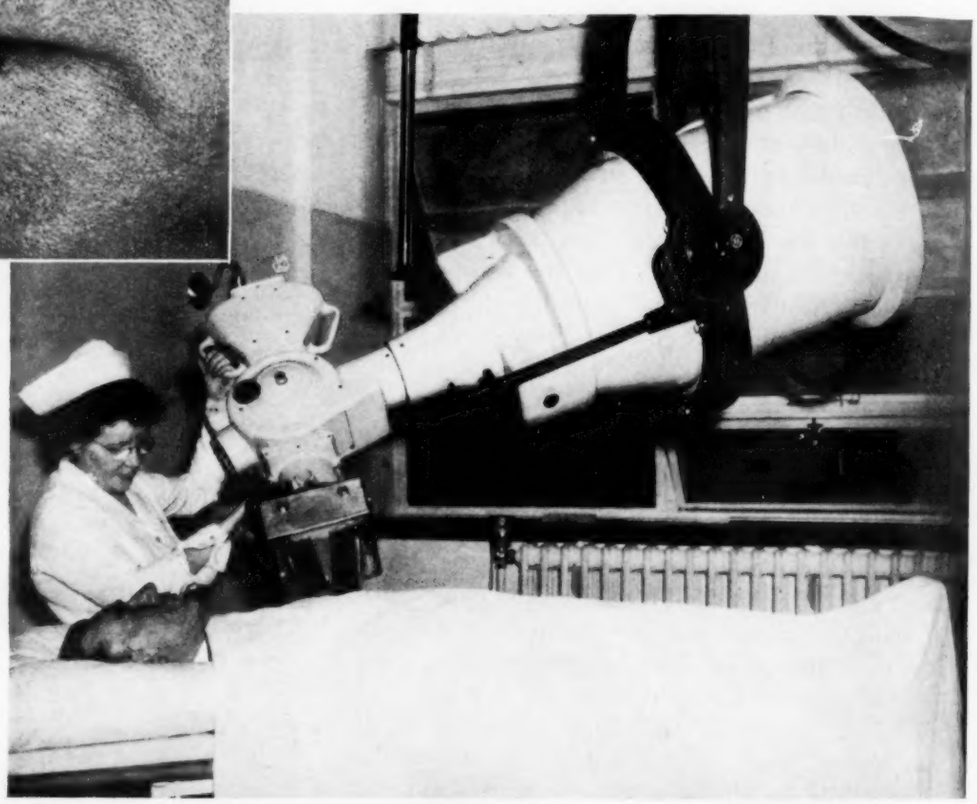
I am only sorry that I chose the newspaper business as a means of earning what I jokingly regard as a livelihood. If I had been an obstetrician I would have made a million dollars by concentrating on the fathers, making the experience of having a baby pleasant, rather than soul searing, and building them up so that the inevitable let-down wouldn't leave them in a state of utter collapse.

And I would endear myself to every prospective father on my list by absolutely *refusing* to say:

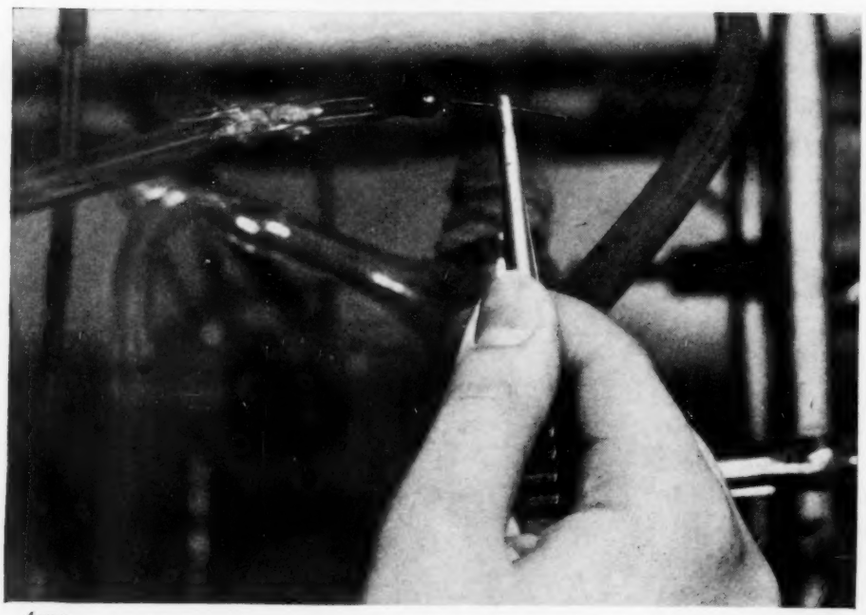
"We have never lost a father, yet."



Cancer, more than any other disease, has needlessly suffered from the curse of silence. Modern methods of treatment are readily available, easy for the trained technicians to manipulate and in many cases highly effective when used early. Below, an x-ray machine of 250,000 volts is placed in position to treat cancer.



Above, an unimportant looking sore on the lip was diagnosed as early cancer. The patient, who plays the cornet, went to his physician three months after the sore appeared. It was treated by radium and has not recurred.



Acme

Radon is a gaseous derivative of radium and may be used in place of its "parent" element in the treatment of certain cases of cancer. Lead pincers hold a tiny gold vial of the precious gas, which is called a radon seed. This is inserted into the tissue to be treated. At right, the machine for administering the radium, known as a radium bomb.

The CURED CANCER CLUB

An organization by this name has evolved as a natural consequence of over 29,000 similar cures brought about by the modern approved methods of treating cancer.

By ISAAC F. MARCOSSON

IN THE little town of Milton, Mass., just outside of Boston, stands a modest shingled house, the very embodiment of New England peace and security. Nor does it belie these words. In this dwelling lives Dr. Anna C. Palmer, president of the Cured Cancer Club. In 1920 Dr. Palmer, then a practicing physician, was operated on for cancer of the breast. Today she talks about her case as if it had been the "flu" or a sprained ankle. At 83 she is an animate document in evidence that the most dreaded of all diseases is conquerable with early diagnosis and proper treatment.

Dr. Palmer is just one of the 29,195 people listed at the end of 1938 by the American College of Surgeons as completely cured of cancer. These are the eligibles for the Cured Cancer Club. From this legion of the cancer redeemed, Dr. Palmer hopes, will come the inspiration for the conquest of a disease which has cost the country $900,000,000 a year. The club is open to any one vouched for by his physician as having been cured of cancer for at least five years before the application for membership is filed. The applicant need only subscribe to the statement: "I am willing to be known publicly as a cured cancer patient."

Cancer, more than almost any other disease, has suffered from the curse of silence. The word itself is a leper in the common vocabulary, conjuring up the picture of long-drawn agony and slow death. People are prone to talk avidly about their operations, but they become strangely silent when it comes to cancer. They implore physicians not to enter the word cancer on the death certificates of members of their families. Only a few years ago a New York newspaper refused to publish the fact that a prominent actress had died of cancer. Pneumonia was thought to have a more pleasing sound. The idea that cancer is a disgraceful disease, touched with stigma and not to be discussed, is still widespread. The Great Darkness, which has so long enshrouded the causes of cancer, was matched by a Great Silence about it. Thousands succumbed because of fear and ignorance. Cancer mortality mounted until the disease became Public Health Enemy Number Two, being exceeded only by heart disease as the cause of death.

One reason for the delay in cancer cure publicity has been the lack of lay education, which struck its stride only within the past few years. The amount of work that still remains to be done in this field is strikingly shown by the findings of the nation-wide poll on cancer taken by the American Institute of Public Opinion in April 1939. Summed up, the survey showed that one American in every three—36 per cent—did *not* know that cancer was curable if treated in time. Forty-one per cent thought cancer was contagious, a fallacy long disproved. And, significantly, 76 per cent of the people polled feared cancer more than any other disease.

With no disease has this fear complex played such a devastating role as in cancer. Everybody fears cancer because everybody, regardless of age, is a potential victim. Moreover, people ignorant of the early symptoms of cancer surrender to the idea that a medical examination means a death warrant. They wait until there

is pain, when it is often too late, for cancer at the start is painless. Thus cancer has been a psychologic as well as a medical problem. It is estimated that from one third to one half of the annual 150,000 deaths could be avoided by early diagnosis and treatment.

The mystery surrounding cancer in the past is partly attributable, as well, to the fact that the medical profession was not fully equipped to cope with cancer. The doctor, like the layman, needed education. In 1928 there were only thirteen clinics approved by the American College of Surgeons. For ethical reasons doctors shied at discussing their cures, while the cured were equally reticent. The only highly publicized "cures" were mainly the advertised "testimonials" to worthless quack serums which cost the gullible public millions of dollars each year.

In 1932 light began to break, pointing the way to all that the Cured Cancer Club implies. That year the American College of Surgeons conducted a symposium on "Cancer Is Curable" at its annual clinical congress in St. Louis. Thirty eminent surgeons, who had operated in some of the most famous hospitals in the United States, reported 8,840 cancer cures, with no recurrence of the disease five or more years after the operation. They were made possible by early diagnosis and treatment through one or all of the only accredited agencies: surgery, the x-rays and radium. When early cancer is surgically removed, it is not likely to recur at all, if there is no evidence of it after two years; so the five-year period was set as a safety cycle.

Typical of the contributions to the symposium was the report of a physician in Minnesota. It showed that over a period of twenty-six years, 110 patients out of 256 suffering from malignant tumors had been cured. One of the outstanding cures, reported by a doctor in Pennsylvania, related to a patient designated as Miss G. She was operated on for breast cancer in October 1903, when she was 61. Her case was carefully followed up. Twenty-five years later she was still directing her farm. An examination a few months before her death at the age of 87 showed that she was free from any indication of cancer.

Publicity from this symposium helped remove the inhibition on talk about cancer and cures. At the same time, popular education on symptoms and the urgent need of prompt diagnosis received an impetus through the educational "Cancer Months," decreed for the nation by President Roosevelt and for many states by their governors. With increasing knowledge came increased facilities. The thirteen approved cancer clinics of 1928 grew to 272 in 1939. State medical societies named special cancer committees, enhancing the efficiency of the doctors. Through governmental grants and private gifts, more radium has become accessible than ever before. New York City, where an intensive educational campaign was waged, showed a striking development. In 1920 only 46 per cent of the breast cancer cases at a large cancer hospital were operable because of delay in reaching the operating table. In 1938 the operable cases there had risen to 87 per cent.

The Cured Cancer Club was the natural outcome of all these developments. As soon as Dr. Palmer was certain that she was cured, she began a one-woman campaign to create a frank attitude toward cancer. She talked before women's clubs, enlisting them in the cause of cancer education. Deeply impressive was the spectacle of this earnest, white-haired woman, herself a compelling testimonial to what she preached. In time she became Vice Commander of the Massachusetts Division of the Women's Field Army of the American Society for the Control of Cancer, which operates in forty-six states now spreading the gospel of cancer control. In 1938 the Cured Cancer Club was founded, largely through Dr. Palmer's efforts; and units are now in process of organization in half a dozen states. Progress is necessarily slow, because people are still reluctant to talk about a dread disease even when they have been cured of it. But when I talked with Dr. Palmer at Milton she was enthusiastic about the future. "Years ago when I began lecturing on cancer," she said, "audiences were embarrassed and unwilling to listen. They felt, as some one said, that while cancer itself is not contagious, the word is. Today cancer facts are accepted. The spread of the idea behind the Cured Cancer Club will give encouragement to the 450,000 men and women in the United States who have cancer. It will teach others that if they act promptly when symptoms that may mean cancer appear, they too have a fine chance to be cured."

Through radio talks, lectures and intensive campaigns in every state, under the auspices of the Women's Field Army of the American Society for the Control of Cancer, the membership of the Cured Cancer Club will be increased. Their program will be a unique attack on the superstition and fear that for years has hindered doctors in their attempts to cope with cancer. And with more than 29,000 people as living proof that cancer can be cured, they are determined to banish the specter of ignorance that has made the disease one of the world's worst scourges.

Are you a SENSIBLE SWIMMER?

The wise swimmer knows not only what he can do in water but, what is more important, what he cannot do, says
LEON FELDERMAN

THROUGH the process of evolution based on ageless forces, the human being has been gradually molded into the homo sapiens of today. He represents the embodiment of countless years of transformation; and when one examines the human blood, particularly the serum, he finds it bears a close resemblance to sea water, thus supporting the fact that man evolved ancestrally from the depths of the oceanic waters. Students of evolution argue that mucin, the mucus which enters into the chemical composition of some of the secretions and excretions of the human body, bears a close resemblance to the secretions of aquatic animals and offers a link of identity which we cannot easily overlook. So if one is called a "poor fish," he must not take offense, for there exists ample biologic facts to support the claim that man is a descendant of the fish.

However, all the scientific facts seem to point out that the human being is not an aquatic animal and can hardly be classed as an amphibian. Anatomically, the upper air passages are so constructed that he cannot live submerged in the water for many minutes. His skin is provided poorly with fatty tissues, and his floating power or buoyancy in the water is poor.

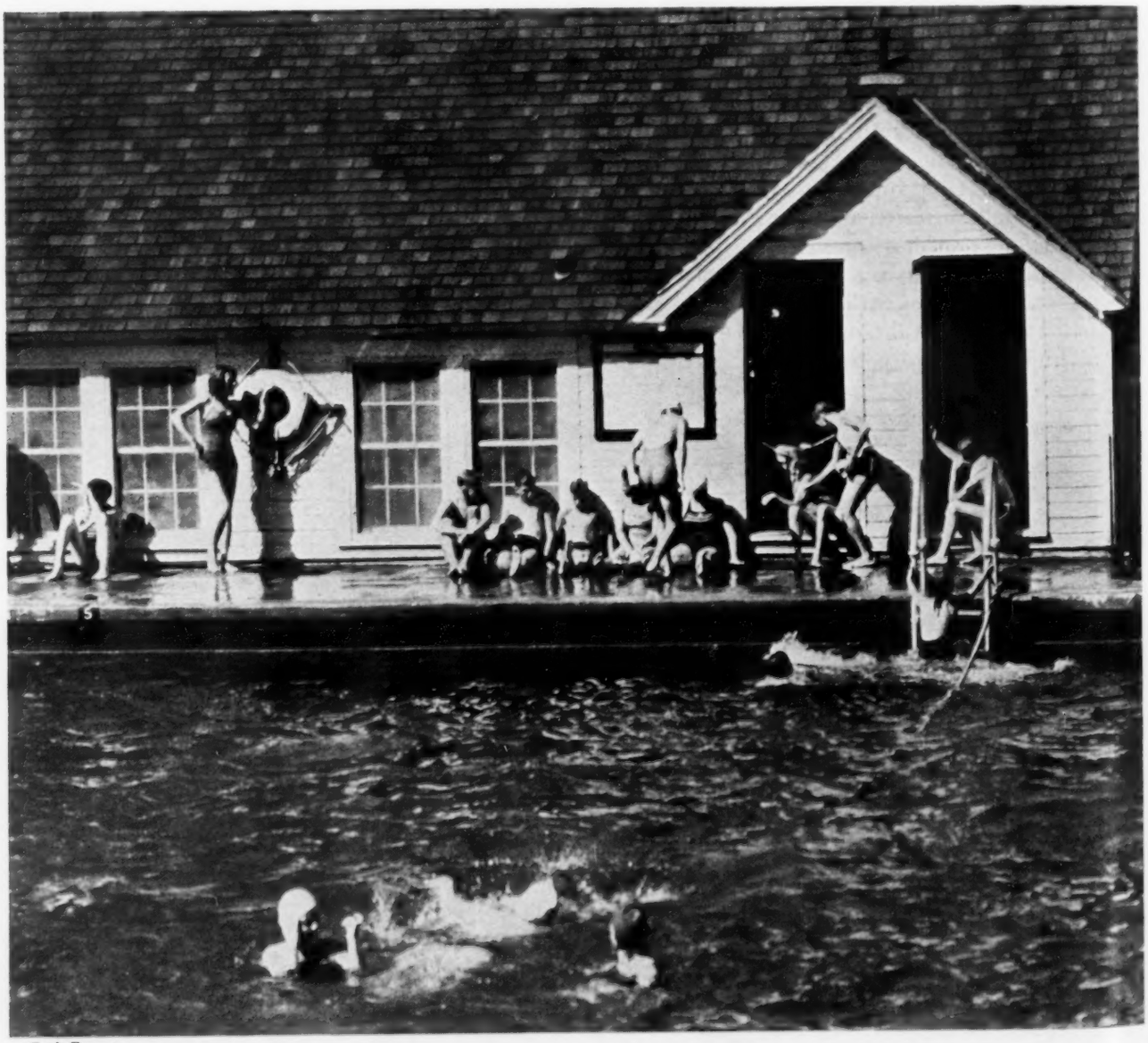
With the closing of the school doors during the summer months, over 30 million children in this country are free from their school duties. The outlet for leisure will be in seeking diversions. Swimming is a recreation which is high in favor with the youth of today. Only one or two generations back, the sport of swimming was reserved for the sultry days; but now with promotors who have an eye for business, this form of relaxation is no longer a summer pastime but has become an all year round exercise. One need not wait for the vacation time to start the swimming season. Today, superbly built and well appointed natatoriums give the exponent of the nautical art an opportunity to indulge any day he chooses.

H. Armstrong Roberts

Physical instructors recommend swimming for weight reduction and development of grace. Psychologists view it as an occasion to work off excessive energy, and neurologists, provincial and gloomy, may indicate it as a morbid phase of exhibitionism. The leaders of physical education take the middle view and believe that knowing how to swim is as necessary as vaccination against smallpox. Any one venturing in a canoe or swimming too far out from shore may "cut corners too sharp," and only the knowledge of swimming can protect the swimmer when he faces danger.

Organizations like the American Red Cross, the Y. M. C. A., Y. W. C. A. and others teach the importance of knowing not only how to swim but what to do if and when a situation arises where quick action is needed to save a life.

Happy is the man who knows his limitations. And this is equally true of the aquatic devotee. An experienced swimmer is great only insofar as he recognizes his own physical limits and will not force a tired body to reach a state of utter exhaustion. To paraphrase: He who swims a little a day may live to swim another day. To venture out too far and trust to luck is not the smart thing to do. Every participant should have on hand a margin of safety, a reserve fund of physical energy. The strongest swimmer may be caught in an undertow and fall a victim to the treacherous tide, unless he can be rescued. Miscalculation and chance trusting are hazardous. The wise swimmer knows not only what he can do in water but more important what he cannot do. Besides, it must be embarrassing for a swimmer sud-



Carl Berger

The pool of today is a far cry from the "ole swimmin' hole." Modern architecture and engineering have improved the nautical building, and people now swim in tiled, aerated pools, treated with chlorinated water to remove the many impurities.

denly to decide that he must ask for help, although swimmers of the fair sex, with a strong leaning toward romance, perforce fail to feel this form of embarrassment. Those who hesitate in the water may perish.

The art of swimming today has reached a high point of development. The knowledge of psychology, physics, anatomy and physiology has been invoked to detail the benefits which occur to the followers of Neptune. A survey of schools and colleges indicates that swimming is the sport that is participated in most and is most popular. The modern pool is a far cry from the "ole swimmin' hole," with its muddy submerged tree trunks and dead animal particles floating on the water surface. Modern architecture and engineering have improved the nautical building, and people today swim in tiled, aerated pools, treated with chlorinated water and supplied with sufficient light to encourage aquatic feats day or night, regardless of weather conditions. The urbanites find the indoor swimming pool sufficient for their needs; whereas the inhabitants of rural parts, because of their location, flock to the outdoor swimming facilities.

From the days of John Quincy Adams, who used to swim the Potomac as a morning jaunt, to the present day of Franklin D. Roosevelt's private swimming pool in the White House, swimming has grown into a tradition of standardized skilful strokes and is well patronized.

Swimming is one exercise that can be indulged in by either sex, regardless of age or station of life. The individual whose nose and throat membrane is hypersensitive or shows a tendency to allergy, who is commonly but mistakenly identified as the hay fever patient, must necessarily be guarded against adding insult to the injured tissues.

I have often been asked what method is best adapted for a swimmer who has an allergic tendency. Of all the recognized standard methods of swimming, such as the crawl, the trudgen, the breast stroke and the side stroke, I would endorse the breast stroke. While the exercise is limited, it has the advantage of keeping the patient's head out of water, assuring him of maximum activity with minimum danger of infection to the sinuses.

One can almost at sight make a diagnosis of the swimmer with an allergic tendency. He emerges from the swimming pool with congested eyes, blocking of the nose, constant sneezing and a profuse watery nasal discharge, demonstrating the effects of the direct attack of the water on the delicate mucous membrane of the nose and throat.

The average allergic person gives a history of having one or more "colds in the head." Such an individual, on nasal examination, will disclose evidences of sinus infection; and with the advent of the pollen season, whether the pollen emanates from trees, flowers, grass or weeds, he is far more susceptible to infection because the accessory sinuses of the nose are diseased. The allergic disease may be grafted on the surface of the unhealthy lining of the nasal sinuses.

Many affected individuals are exceptionally fond of swimming as a method of exercise and relaxation. Despite the fact that the modern swimming pool is the product of the finer architectural minds, it contains many potential germs which aggravate the allergic mucous membrane of the nose and throat.

When the water gains access to the upper air passages by its presence, it is capable of creating a sharp aggravation in a dormant, unsuspected infection. The allergic patient becomes an easy prey to the indoor swimming pool. From the moment he dives into the water, he is open to any of these common infections: pink eye, acute colds, sinus infections, tonsillitis, boils, ringworm or "athlete's foot," meningitis and often the rekindling of a quiet allergic disease commonly known as hay fever. One must bear in mind that while swimming is an individual sport, it can be indulged in company with many other bathers who are possible carriers of certain germs and who thus contaminate a swimming pool.

The argument that swimming pools are antiseptic ized is a poor one in the light of known facts, which we cannot dismiss lightly. Bacteriologically, it has been proved that the chief water inhabitant of the swimming pool is the Bacillus coli. Some of the larger states, such as California, New York and Pennsylvania, allow on the average of one Bacillus coli per cubic centimeter. But this does not eliminate the occasional streptococcic or meningococcic germs which are potentially responsible for sinus and brain infections. All the free floating microscopic organisms in the water, with the exception of bacteria, that the bather has to contend with are known as "plankton." The impurities in plankton vary with the location of the body of water and its state of purification. The distribution of plankton in a body of water depends on the depth, temperature of the water and the light in that area. For instance, green plants will be found in the upper strata of the water and some animals which feed on the algae [water plants]. On the bottom we find many of the animals which thrive on the sur-

face but who after death drift downward. This is influenced by season, temperature, gradients, light reaction, depredations of enemies and circulation of water. Most of the plankton are offensive to the taste, and when one can detect offensive odors, it is due to the presence of plankton. Disagreeable odors are due chiefly to decomposition and the liberation of gases, such as hydrogen sulphide.

Bacterial counts are made daily to check the growth of algae. One should bear in mind that the most rigidly supervised pools do not preclude the contracting of a skin, eye, ear, nose and throat infection.

The number of bacteria per cubic centimeter in the water should not be over 250, and colon bacilli should be entirely absent. It is customary for twenty persons to use 1,000 gallons of bathing water.

Owners of swimming pools rely on the virtue of chlorine as an antiseptic. They feel that if chlorine comes in contact with the water, it forms a mild hypochlorite solution and liberates oxygen which destroys the bacteria. In a pool containing from 25,000 to 75,000 gallons of water, the chlorine will become dissolved in a more or less uniform fashion and thus bring about sterilization in the shortest time possible.

Today, the pools are provided with skimming gutters to remove the surface dirt and equipped with entrances and exits to maintain a continuous circulation of water, providing the patrons with facilities under sanitary conditions which reduce infectious diseases to a negligible factor.

A number of large cities have taken an interest in the proper handling of their swimming pool crowds. There has been a scientific study and a more exacting control of the operation of pools in these cities. The possibility of transmission of disease in swimming pools has aroused interest in the past few decades. In 1915, Mannheimer cited nineteen authorities who reported venereal, intestinal, ocular and aural [ear] diseases in pools. Among the most prevalent infections which would result from swimming are the common cold, sinus and middle ear infections. Very little data is available giving definite information on communicable diseases. The consensus of authorities seems to be that there is a potential danger of person to person transmission of pathogenic bacteria added to the pool by swimmers and that this danger may be greatly minimized or eliminated by an efficient disinfective agent. This remains to be checked by accurate statistics.

A modern swimming pool should have the following sanitary provisions.

Pool attendants allow the pool privileges to those who are free from skin infections and running sores by a quick objective inspection. The swimmer can serve himself best when he realizes his own shortcomings. One who suffers from a headache or discharging ears is foolish to seek pleasure in water, for it may not only aggravate a seemingly minor ailment but endanger his health.

The competitive art of swimming today has encouraged diving from high distances or resorted to using the crawl for speed to win or hold a swimming record. When the head is constantly submerged in the water the individual subjects the organ of hearing to pressure which sooner or later injures it and thus permanently becomes affected. This is noticeably true of long distance swimmers. Channel swimmers have been known to become stone deaf shortly after they accomplished the cherished objective. The lover of aquatic sport with defective hearing need not feel that he must abandon the sport, if he can be contented with the use of the breast stroke method which keeps the head above the surface of the water. Physicians recognize a class of people who show hypersensitivity to cold water. Swimmers will dive into the water and to the amazement of the onlookers lose consciousness and drown before help can reach them. They are rendered almost helpless when their skin comes in contact with the cold of outdoor water. They belong to the physically allergic type and should be warned of this.

It will not be amiss to mention a few "don'ts" to devotees of the art of swimming.

1. It is advisable to wait two hours to allow the meal to be thoroughly digested before entering the swimming pool. Many lives have been lost by disregarding this rule.

2. Those who give a history of pain in the ear or head would do well to defer the swimming until such time when they are free from this condition. Water entering the nasal or ear passages will aggravate it.

3. The element of ear infection appears to be greater in those who have wax in their ears.

4. Swallowing or clearing the nasal passages under water are infection risks to the middle ear canals. Do not rely entirely on wearing ear plugs or stuffing the ear canal with cotton. It gives one a false sense of security, particularly false to those who suffer from chronic discharging ears. The patient who suffers from allergy, especially the physical form, should consult his physician first about swimming.

It is important to swim well, but it is more important to swim wisely.

CLEANING UP ON FOOD

By JEROME MEYERS and ELIZABETH SEMENOFF

A PROBLEM in sanitation has been created by many careless grocers and other food handlers, which until this project was created has been carried on in the City of New York without any organized opposition.

The district health officer of the Mott Haven health district in April 1937 brought out the grave dangers of spreading certain diseases through unintentional contamination of food by saliva and suggested that measures be instituted to inform the people in this district about it.

The various methods and channels through which foods and other articles of commerce, plus their wrappings, can be contaminated were summarized to include:

1. Contamination of foods or food wrappings by fingers moistened in the mouth in:

- *a. Groceries*
- *b. Dairies*
- *c. Delicatessen stores*
- *d. Bakeries*
- *e. Drug stores*

2. Contamination of bills in making change in food stores.

3. Contamination of foods or food wrappings by employees in different types of food stores after handling soiled bills and coins.

After considerable discussion, it was agreed that a first approach to this problem should be made in the Mott Haven district in connection with the contamination of foods or wrappings by fingers moistened in the mouth. The district has many small dairies, delicatessens, bakeries, drug stores and grocery stores owned and operated by individuals whose interest could be aroused.

There is an occasional naturally cautious food handler who always keeps his hands off the food that is going to be eaten by another person. For one of these, however, there are countless others who handle cheese or butter with the same fingers that a moment before put a dirty dollar bill into the cash register. The common forms of carelessness in the handling of foods are common for two reasons: The food dealer is indifferent to the desirability of clean food handling and the average customer is only unconsciously, if at all, aware of anything wrong in the careless handling. A campaign to lead the grocer and the customer to understand that it does make a difference how food is handled was undertaken by the committee on health education.

Although an official ruling does exist, the committee decided that the Cleanliness Campaign must in no way be one of censoring or punishing but must be entirely educational.

The Mott Haven health district covers many square miles with about 230,000 inhabitants. The people, in the main, have small incomes; many are of foreign parentage, and conditions of living are downright undesirable in some sections and satisfactory in only a few. The campaign aimed to inform food dealers concerning proper methods of handling ready-to-eat food and to stimulate them to have such methods carried out in their shops. It also aimed to make buyers of food aware of what sanitary and unsanitary food handling meant in relation to health and to arouse in them a desire to trade in shops where food was handled in a clean way.

Almost no money was available for the campaign; therefore, cost had to be kept at a minimum. This meant omitting anything spectacular, everything in fact but the most essential printing.

What could be done that would cost the least but go the farthest? One message must go to the food dealers, and

another message should be sent to the food buyers.

For the dealers the following simple code was drawn up:

FIGHT DISEASE WITH CLEANLINESS
HEALTH AND FOOD HANDLING

The unclean habit of putting fingers into the mouth may be responsible for spreading the germs of the following diseases

TUBERCULOSIS	PNEUMONIA
DIPHTHERIA	MEASLES
SYPHILIS	SEPTIC SORE THROAT
COMMON COLDS	TRENCH MOUTH DISEASE
INFLUENZA	SCARLET FEVER

Hands can also carry typhoid germs

Therefore, we pledge ourselves, to protect you, our customers, by observing the following code:

WE KEEP OUR FINGERS OUT OF OUR MOUTHS

WE KEEP OUR HANDS OFF YOUR READY-TO-EAT FOOD BY USING TISSUES OR TONGS

WE KEEP OUR FINGERS OUT OF THE INSIDE OF CONTAINERS

WE WASH OUR HANDS FREQUENTLY AND *ALWAYS* AFTER THE USE OF TOILET

By doing so, we hereby pledge ourselves for a better and safer Mott Haven District.

SIGNED.....
Proprietor

The plan called for the dealer's signing the card and displaying it in his window. Of these codes 500 were printed on heavy white cardboard 11 by 14 inches at a cost of $15.

For the buyers of food, the following message was printed on 20,000 gaily colored handbills, 6 by 9 inches, at a cost of $23.

FIGHT DISEASE WITH CLEANLINESS

TO YOU, BUYERS OF FOOD:

Diseases are sometimes brought to your home with the food that you buy. Food unprotected from dirty hands, hands that are moistened in the mouth, hands that handle money and other common objects can bring sickness to your family.

Carelessness in handling "ready-to-eat" foods is a real danger. Eddie, the grocer's boy, has a contagious disease, but he thinks he is all right. You buy some butter or a piece of cheese from him. While waiting on you, he "licks" his finger to pick up the wrapping paper, as is his habit. The butter, the cheese look clean. You cannot see the germs of disease which went on the food from Eddie's mouth, but they are there. Some time later your boy Johnnie gets sick. It is quite possible that you brought him the germs of disease with the food handled by Eddie.

Diseases that can enter your home with food which has been touched by unclean fingers are:

TUBERCULOSIS	TYPHOID
DIPHTHERIA	PNEUMONIA
SYPHILIS	SEPTIC SORE THROAT
COMMON COLD	TRENCH MOUTH DISEASE
INFLUENZA	SCARLET FEVER

MEASLES

Your food dealers in Mott Haven are displaying Cleanliness Pledge cards in their windows. Encourage them in their fight against disease. Continue the proper handling of food in your home. You can do your share for a better and safer Mott Haven District by pledging yourselves to the following:

WE WILL KEEP OUR FINGERS OUT OF OUR MOUTHS.

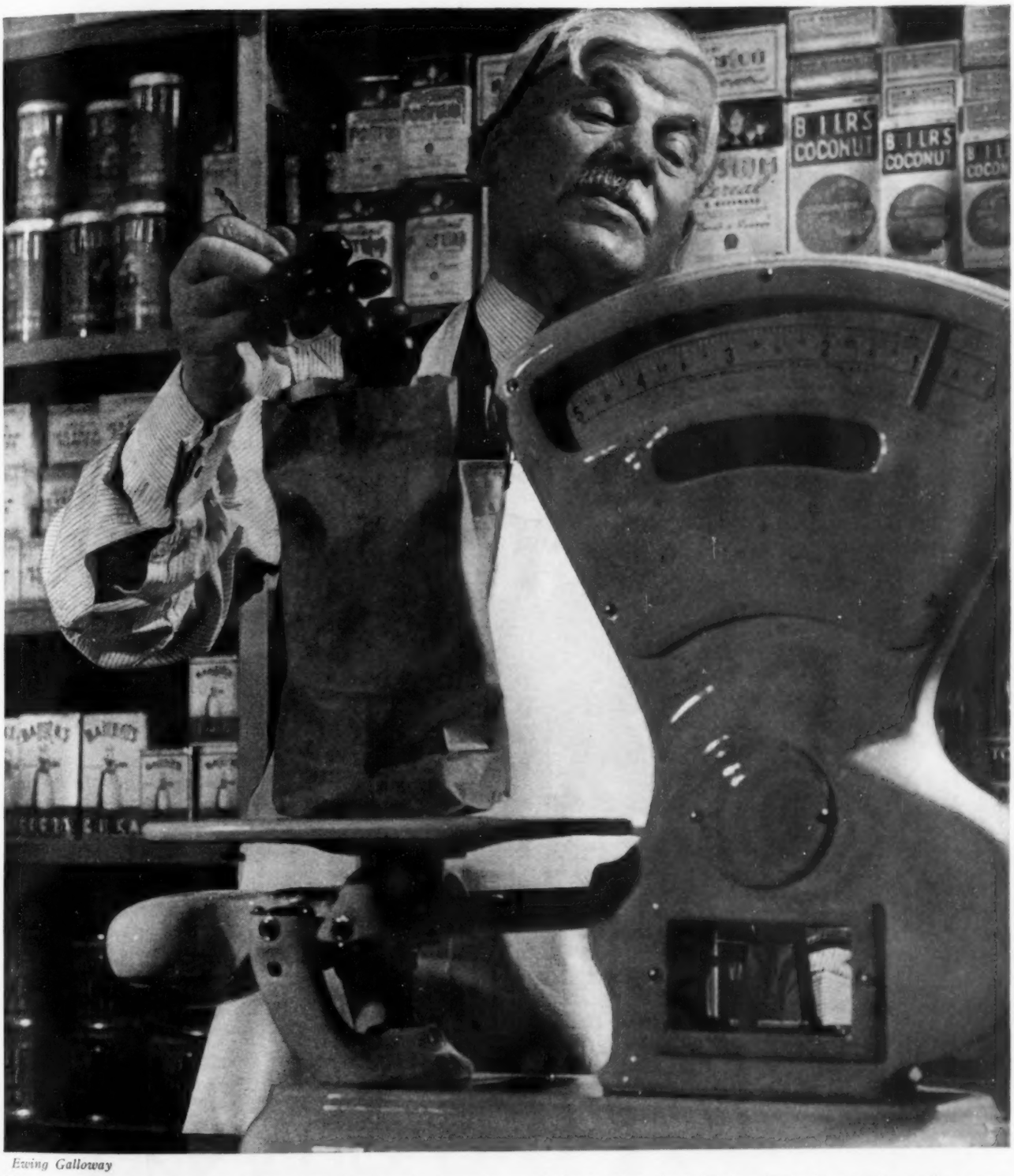
WE WILL WASH OUR HANDS WELL WITH SOAP AND WATER BEFORE WE HANDLE FOOD.

WE WILL WASH OUR HANDS ALWAYS BEFORE EATING AND TEACH OUR CHILDREN TO DO SO.

WE WILL WASH OUR HANDS ALWAYS AFTER THE USE OF THE TOILET AND TEACH OUR CHILDREN TO DO SO.

A community program cannot and should not be carried through by the few people on a single committee. The Committee wanted as many people actively interested in this campaign as possible. And there was work to do! Five hundred cards to be taken to five hundred shops, the campaign explained, signatures secured if possible, and interest aroused to display the signed card in the window. Twenty thousand handbills must reach twenty thousand homes!

A request to the various groups of parents, church clubs and women's auxiliaries in the community brought twenty-five women volunteering to work under the "Fight Disease with Cleanliness" slogan. The nature of the campaign necessitated careful instruction to the volunteers, because to be successful, this effort to educate dealers and buyers in sanitary methods of handling food must in no way even remotely suggest punitive or official action. It must be purely educational and cooperative.



Ewing Galloway

There is an occasional naturally cautious food handler who always keeps his hands off the food that is going to be eaten by another person.

Each worker was given twenty cards for dealers in a designated area and was asked to return a report of the name and address of each dealer visited with the result of the interview.

The plan of distribution by the volunteers worked effectively. The placing of 500 cards could not cover the whole district, but every card took its message to one shop at least. An added advantage was winning twenty-five new friends for health work, since all of the women expressed a wish to help again!

The message to the buyers of food went to the homes in the community through various channels. Four libraries gave it to 2,000 adult readers. Department of Health nurses gave it to 500 mothers visiting Baby Health Stations. Henry Street visiting nurses distributed it to several hundred homes *(Continued on page 744)*

What it means to have a "sensitive" child is shown by
H. A. SLESINGER

H. Armstrong Roberts

The ALLERGIC

SOME TIME ago a mother rushed into the hospital with an extremely ill child; he was gasping for breath; his lips were blue; and his respirations were accompanied by an asthmatic wheeze. Only a half hour earlier this 3 month old baby had been perfectly well, but his mother had decided to try some additional food besides the breast milk on which he had previously been fed. She prepared a mixture of cow's milk and gave it to the baby. He had no sooner taken a few drops of this mixture when he suddenly started to gasp for breath and became blue. He was brought to the hospital immediately. A small dose of epinephrine administered hypodermically promptly relieved the patient of his symptoms.

This was a typical case of allergy to cow's milk. We kept track of this baby for a long time. The mother was warned never to feed him any cow's milk unless it was given under

strict supervision. As the baby grew older he could tolerate other foods, such as cereals and vegetables, but he could never take any milk without developing symptoms. On a few occasions when he was about 1 year old, attempts were made to give him some small quantities of milk. He would develop hives within ten to fifteen minutes from the time that the milk was administered. To avoid any such symptoms it was necessary for him to be kept on a diet that was absolutely free of milk.

Allergy may be described as a condition in which one is sensitive to certain specific substances which are perfectly innocuous to the average individual. Thus a common food such as milk almost caused the death of the baby that I described. One may be allergic to any of a great number of substances. These include foods of all types; inhalants such as dust, pollens, feathers and animal dander, or the allergy may be due to certain substances with which the victim might come in physical contact, such as silk, wool or chemicals. Change in outer temperature may produce allergic symptoms. One may be allergic to just one substance or to many substances.

Just why certain persons are allergic we cannot explain. We do know, however, that allergy is one of the inherited traits; thus, we find families in which several members of the family are allergic. I know one family in which a mother and three children have hay fever, which is a form of allergy to pollens. In another family two boys have hay fever; another had angioneurotic edema [an allergic condition characterized by marked swelling of certain parts of the body, such as the lips and eyelids], and a sister had hives. About 7 per cent of all the population are allergic.

Allergy in children may manifest itself in many forms. The most common types are:

CHILD

(1) eczema, (2) asthma, (3) hay fever and (4) hives. There are rarer forms, such as certain types of headaches, angioneurotic edema, abdominal pains and edema [swelling] of the larynx, such as occurred in the infant described; in these cases there is swelling of the tissues of the voice box with consequent obstruction of the breathing apparatus, resulting in choking.

The earliest manifestation of allergy is a skin condition known as eczema. About 75 per cent of all cases of eczema in infants result from this condition. It usually starts between the second and sixth months of the infant's life. At first, one notices a slight eruption on the cheeks; later, the skin of the legs, arms, wrists and neck become involved, and in some instances the entire body may become covered with a scaly or moist eruption. In most cases the cause of the eczema is the presence of certain proteins in cow's milk which cannot be tolerated by the average allergic baby. It is true that we frequently see eczema in breast fed babies. However, these cases are usually milder than in the instances when the baby is fed cow's milk. It is possible for an infant to be allergic to his own mother's milk; but it is usually unwise to wean such a baby, because he will probably be more allergic to cow's milk, and the symptoms will only become aggravated.

There are other substances besides milk which may produce allergic symptoms in the susceptible infant. The baby under 6 months may be sensitive to any of the following substances: cereals, cod liver oil, orange juice, tomato juice, spinach or to one of a few other vegetables which he may be receiving. Experience has shown that the proteins of cow's milk are the most important cause of allergic manifestations in the young infant. Therefore, most of these patients are treated by using some form of evaporated or superheated milk or by using a milk substitute.

Many of these babies will recover completely and never have any more symptoms of allergy. Others remain allergic to milk and must be kept on a milk-free diet for many years. Still others become allergic to other substances and develop various types of manfestations. Thus, we find that an allergic child may have had eczema at the age of 6 months, hives at the age of 1 year, asthma at 3 years and hay fever at 5 years or any combination of these conditions.

Albert Kane is an excellent example of the vicissitudes that an allergic child experiences. At the age of 6 months he developed eczema of the face, arms and legs. This was found to be due to cow's milk, and he improved when placed on a milk-free diet. He was free from symptoms until he became 2 years old, when he began to suffer from attacks of asthma. At this time it was found that he had become sensitive to house dust, wheat and eggs in addition to the milk. At the age of 5 years he began to have severe attacks of sneezing during the month of June. He was now found to be sensitive to a group of grass pollens. Thus, we find that an individual who is basically allergic may become allergic to new substances

from year to year. On the other hand, his allergic reaction to the offending agent may diminish from year to year. This is particularly true in children.

The most outstanding form of allergy is hay fever. We are all familiar with the symptoms of hay fever—the sniffling, sneezing and watery eyes from which the victims suffer. Hay fever is the simplest type of allergy to study and treat. There are various false notions about this disease. In the first place, it has been misnamed, because the symptoms are really not produced by hay. The disease which we ordinarily know as hay fever is really caused by a group of pollens that are prevalent during the latter half of August and the entire month of September—until the first frost. The common offenders are the ragweed pollens. For many years the goldenrod was accused of being the cause of hay fever. However, in recent years it has been found that this flower is perfectly innocent. The goldenrod pollen is carried by insects and so does not pollute the air. In order to cause hay fever the pollen must circulate in the air. Therefore pollens of flowers that attract insects and are insect-borne are not of any importance in causing hay fever.

There are other pollens at various times of the year that cause sneezing and sniffling in susceptible individuals. Thus, in April and May tree pollens may cause symptoms. In June the pollens of grasses such as timothy, orchard grass, June grass and sweet vernal are the offending agents. Incidentally, rose fever is in reality caused by these grass pollens and not by the rose. The rose is not a factor in producing the symptoms. During the month of July the pollen of the English plantain may cause symptoms.

There are several methods that are used to determine what substances are causing the allergic symptoms. The most satisfactory method for infants and children is the scratch test. With this method a number of small scratches are made on the back or arm of the patient, and a minute amount of concentrated extract of the suspected material is rubbed into the scratch. The skin in the vicinity of the scratch will puff up into a hivelike formation if the suspected substance is actually at fault. Another method is known as the intradermal test, in which an extract of the suspected substance is injected into the skin. However, on account of the possibilities of a general reaction, this method is somewhat dangerous in infants. There is, in addition, a third method which is used frequently in children. This is known as the passive transfer method. A drop of the baby's blood serum and a drop of the suspected extract are injected into the skin of the mother or father. In the event that the baby is susceptible to one of the substances used, the parent's arm will puff up at the site of the inoculation.

There are actually hundreds of substances which might be causative factors in producing allergic symptoms. As the child grows older, consideration must be given other foods, and in order of their frequency these include wheat, eggs, spinach, peas, tomatoes and potatoes.

Another important form of allergy in children is sensitivity to horse serum. It is essential to determine if such sensitivity exists before giving a child any antitoxins or serums of any kind, because most of them contain horse serum. Doctors should always test a patient for sensitivity to horse serum before administering antitoxins or serums.

The treatment of the allergic child is indeed a difficult problem and requires much patience. There are two methods of dealing with the allergic patient. The first and most satisfactory is to eliminate the offending agent from the patient's diet or environment. The second is to desensitize him. In treatment of an infant with severe milk sensitivity, milk substitutes must be prescribed by the doctor. A considerable number of such substitutes exist.

When the child is sensitive to environmental factors, it is often impossible to eliminate them, and desensitization is then attempted. This is of particular value in hay fever. It is accomplished by giving hypodermic injections of an extract of the offending pollen in gradually increasing doses. In order to obtain good results it is necessary to start the treatment a few months before the season so that a large enough dose of the pollen can be given just before the season starts. Hay fever treatments are frequently unsatisfactory because of failure to carry out the course of treatment properly. A recent method of treating hay fever is to give the patient one injection every two or three weeks throughout the year and keep up his immunity to the pollen in that manner.

Frequently, patients say that their symptoms are worse at night. In such cases we usually find that they are sensitive to chicken feathers, goose feathers or kapokseed, which are essential components of pillows and mattresses. In such cases special bed clothing made of silk floss will often relieve the symptoms.

Allergy is fast assuming a place of importance in the medical management of a child. It can simulate many diseases, even appendicitis, and many mysterious symptoms may be accounted for when allergic tests are made on the patient.

The DEFEAT of the CATTLE TICK

By J. C. McDOWELL and S. R. WINTERS

THE cattle fever tick is doomed. Time was when he roamed at will over every southern state and parts of California. In those days he—or perhaps we should say she, because it is the female of the species that is more deadly than the male—had a glorious time at the expense of southern dairy cattle.

That went on year after year, because nobody knew that the innocent looking little cattle tick had the diabolical power to carry the so-called Texas Fever in an underhanded way from one animal to another. In fact, at that time it had not been proved that the disease was infectious.

Yet wherever the tick went, the fever followed; and death had a bountiful harvest of

cattle of all ages and sizes. Their carcasses were valueless, and their hides were so badly punctured by tick bites that they couldn't even be salvaged for shoe leather.

All the way from the tides of Virginia to the plains of western Texas and from southern Kentucky to the Gulf of Mexico, the ticks flourished and grew fat, and many cattle languished and died. Doubtless this had been going on for hundreds of years, because the so-called Texas Fever ticks did not originate in Texas at all but in far-off Spain; they came over on Spanish cattle to the New World with the conquistadores, who landed on the islands of the West Indies and later conquered Mexico, marching through our southern states from Florida to Texas.

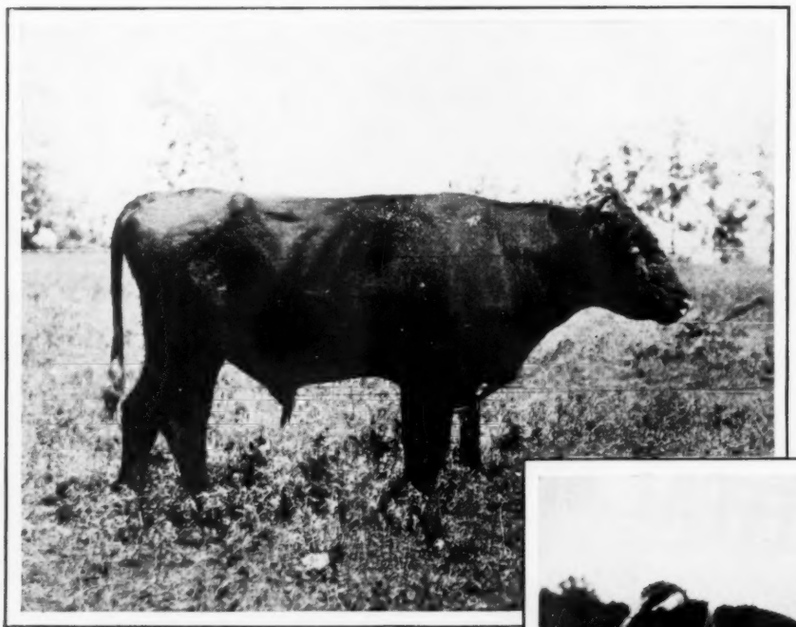
But we are not so much concerned with when the ticks came, nor whence they came, as with what they did after they got here and the fascinating story of their elimination. No, they are not all gone, not quite; but they now have less than 4 per cent of the territory they occupied in their palmiest days fifty years ago before the detectives, the American scientific G-men, were set on their trail.

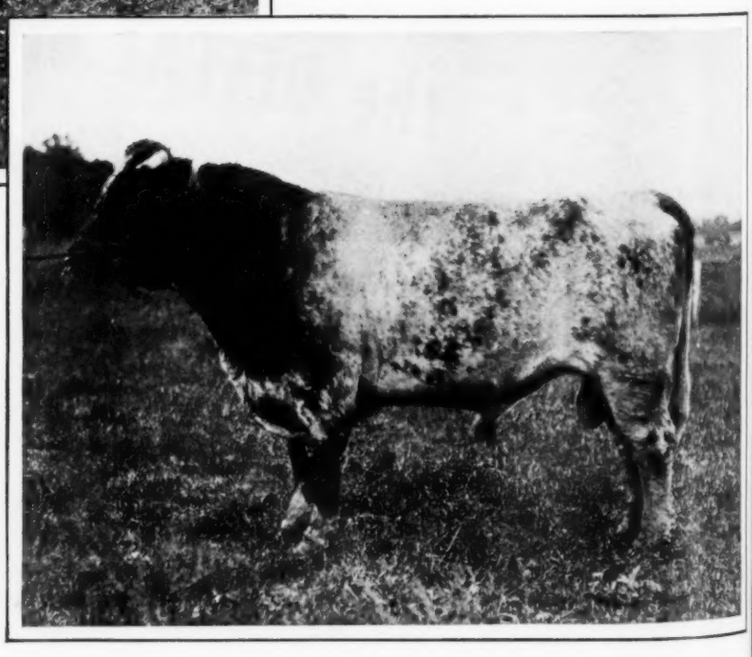
But why are we especially interested in the problem at this time? Because a final campaign is on to destroy every cattle tick that still remains in continental United States. This will be a fight to the finish. It is expected that the campaign must be continued for three years; but we know what the result will be: the defeat of the tick. It is a case of man against the insect, and man must win. Our fighting men are under the leadership of Dr. John R. Mohler and Dr. W. M. MacKellar of the U. S. Bureau of Animal Industry, in cooperation with the Livestock Sanitary Boards in states still having ticks within their borders.

What a glorious celebration we shall have when the last of all the cattle fever ticks loses its inglorious life in a dipping vat in one of our southern states. A monument should be erected on that spot, and on the face of that monument should be engraved the illustrious names of those who took a leading part in the battle against the tick.

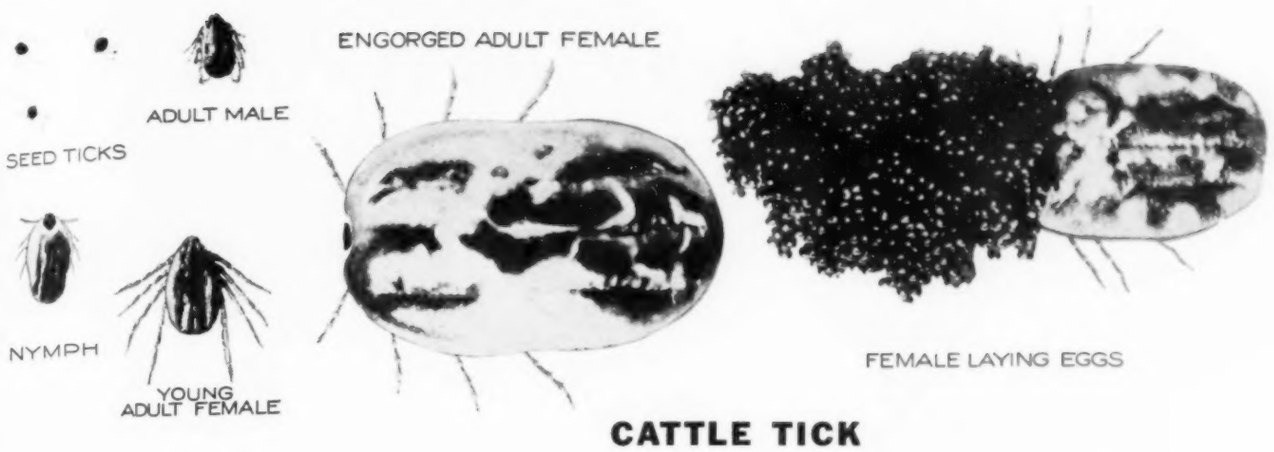
The first positive information we have in this country regarding the disease now known as tick fever dates back to 1795 when George Washington was President of the United States. Strange to relate, that outbreak occurred in southeastern Pennsylvania, far north of what was later found to be the tick infested area.

At the close of the Civil War,





Above, a pure bred shorthorn bull is infected with the cattle fever tick. The bull at right has no tick fever to trouble his placid life. Such a mighty war has been waged against this tiny insect that the species is eliminated in 96 per cent of its former territory.



CATTLE TICK

many good cattle were purchased in the North and shipped south to improve southern herds. Nearly all these cattle brought from the North took the fever and died. This caused tremendous losses to many a southern family. These losses were so great that the southern market for northern cattle soon almost ceased to exist. When southern cattle were shipped north in the summer time, the northern cattle with which they came into contact frequently took the fever and died. Because of these losses, a thorough study was made of the disease to determine, if possible, its cause and cure.

No Sherlock Holmes detective story is more thrilling than the story of how Dr. Cooper Curtice, Dr. F. L. Kilborne, Dr. Theobald Smith and other eminent scientists fastened the guilt on the cattle tick and discovered how the tick might be eliminated. The tick was killing our cattle right before our eyes, yet was covering up her tracks so well that the best scientists in all the world were unable for a long time to prove anything against her. Even as late as 1880, according to Dr. Houck: "Scientific men generally were inclined to regard the tick theory as absurd."

Finally, it was found that there was a certain type of protozoa [one celled animal] in the blood of all cows sick with the fever and that they were never found in the blood of healthy animals. It was also found that the disease could be transmitted from the sick cow to a well cow by transferring a small quantity of blood from the diseased animal to one that was well. That was first class evidence that the fever was caused by the protozoa. But if carried by the tick, how was it done? The ticks that fell off one animal could not be made to fasten themselves on another. Anyway, there were eight kinds of ticks commonly found on cattle. If one of the eight was guilty tick, which one was it?

The investigators finally found that one of these ticks, whose Latin name is Boophilus annulatus, carried the disease indirectly. The female tick gorged herself with the blood of the infected animal, fell to the ground and laid her eggs in the grass, where they hatched. The blood of the little ticks contained the protozoa. The young ticks climbed up the pasture grasses and fastened themselves on the legs or other parts of the bodies of cattle that came along. In sucking the blood of the animal, this new generation of ticks transmitted the disease.

Now that the scientists knew the cause of tick fever, they soon found a remedy. This consisted of a dip in arsenic strong enough to kill the tic but not strong enough to injure the cattle. It was discovered that each generation of the tick, Boophilus annulatus, had to spend a part of its life on the body of cattle, horses, mules or deer. The tick could not grow to maturity in the pasture grass. So if no animals on which it could live came along, it died. By frequent dipping of all animals on which the ticks must spend a part of their lives, it was possible to eliminate the tick from any given area. When the tick disappeared, the fever ceased to exist.

When all this became known, one would think that the way would be clear to eliminate the fever from American territory. Not so. The most difficult and dangerous work was still ahead. Man is his own worst enemy. Anyway, it proved so in this case. No sooner had the veterinarians begun to fight the cattle tick, than a swarm of ignorant cattle owners began to work up opposition to the construction of dipping vats and to dipping the cattle.

Scripture was sometimes quoted, or misquoted, by those opposed to the work. One woman from a backwoods district said: "The Bible forbids the dipping of cattle. It says: 'If thou puttest they neighbor's ox into the pit, thou shalt be damned.'" *(Continued on page 740)*

MODERN NURSERY RHYMES

By Margaretta Harmon

EYES RIGHT!

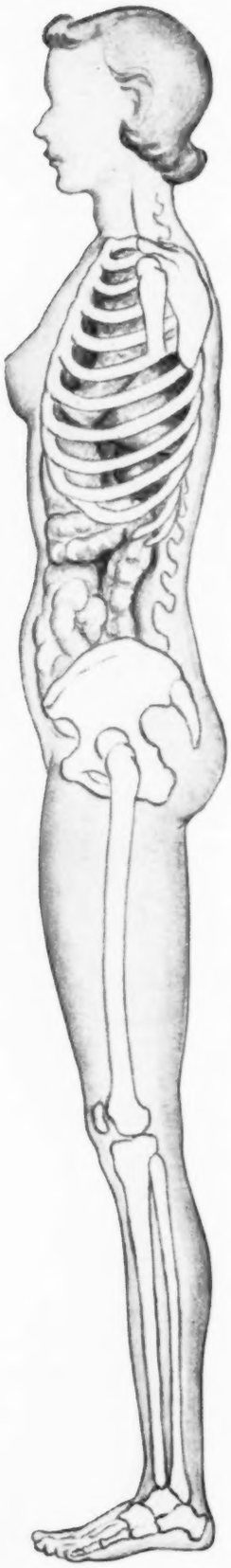
Wrinkle, wrinkle, little brow,
How I wonder what's wrong now!
Every time I read, I squint;
Maybe it's too fine a print.

Glasses will correct my sight,
Then I must adjust the light;
Over my left shoulder straight
It must shine when I read late.

THE CROOKED MAN

There was a crooked man
  Too lazy to stand straight;
His shoulders always slumped, and
  He had a slouchy gait.

When he was just a boy,
  This posture he began;
No wonder he grew up to be
  A very crooked man!



Poise of the body in the properly balanced line without muscular tension or rigidity—that is good posture. All the interior organs are held firmly in their natural positions, where they function most efficiently.

The Mechanics of Health

The significance of bodily straightness is shown by **HALFORD HALLOCK**

GOOD health depends on many factors, and good posture is one of them! Posture is the attitude in which we hold our bodies, and although we all vary in bodily type and anatomic construction, good posture enhances function in all, and poor posture leads to inefficiency and functional impairment.

The human body is a marvelous, intricate machine and is subject to mechanical laws and forces. It is used most of the time in the sitting and standing positions, in which attitudes the force of gravity has pronounced effect on its various parts, always tending to displace them and throw them out of alinement.

Displacement of parts in any mechanical machine produces inefficient running and eventual damage to other parts. So too in the human mechanism, displacement of structures causes inefficiency of operation, strain and damage to parts and lowered resistance to outside factors, such as disease and injury.

If, then, we are to expect maximum performance, we must continually hold our bodies in the position that will keep their various parts in proper working order. This means consistently good posture.

What is good posture? It has been defined as the poise of the body in the properly balanced line without muscular tension or rigidity. Correct trunk alinement requires that the weight of the body be carried well forward and on the outer borders of the feet, the lower abdomen pulled in and up, the back flat, the head up and the chin in. The keynote is the use of the abdominal muscles. When these are contracted, firmly drawing in the lower abdomen, the chest is automatically pushed up into the proper position, and the spine is flattened. To raise the chest, as is so frequently done by forcibly squar-

ing back the shoulders, usually accomplishes nothing of benefit, because it produces a hollow back and demands an abnormal amount of energy to maintain this strained position. This causes fatigue, and the person soon drops back into his original faulty attitude with round shoulders, bulging abdomen, flattened chest and drooping head and neck.

Nor should the firm, flat abdomen, which is the foundation of good body posture, be obtained by raising the chest and forcibly drawing in the breath, for when the thorax relaxes as the breath is released, the abdomen sags back into its original condition. The correct position of the abdomen, chest and back can only be obtained by the proper use of the abdominal muscles. One writer has said that the individual should be taught to pull in the abdominal muscles so hard that the head is pushed up with the chin in.

Poor mechanics in the use of the body is widespread. One can see numerous examples any day by simply walking down the street.

Surveys reported at the White House Conference on Child Health and Protection revealed that 80 per cent of the children in this country had bad posture. This is a serious challenge, for this country needs stalwart men and women. Ample work has been done to indicate clearly that poor posture means reduced efficiency, lowered vitality and predisposition to disease.

The ill effects of poor mechanics are numerous and involve directly or indirectly almost all the structures of the body.

The bones and joints with their supporting ligaments and activating muscles form the basic structure of support. The spine sustains the weight of the head and trunk and is supported on the sacrum and pelvis, which are in turn balanced on the lower extremities. Ligaments hold the joints together, and muscles keep the structure erect. If each muscle does its full quota of work, the structure is held in balance. However, if one group backslides, other muscles must do more than their share, and imbalance results. Fatigue develops, muscular and joint strain ensues, and displacements and deformity occur.

Poor posture with its drooping chest and prominent abdomen produces an increase in the normal curvatures of the spine and an exaggeration of the forward tilt of the pelvis. The normal line of weight is deflected, and abnormal strains and thrusts are brought to bear on portions of the bones and joints that were not designed to withstand excessive force and that are incapable of supporting it without producing symptoms and eventually sustaining permanent

The ill effects of poor mechanics are numerous and involve directly or indirectly almost all the structures of the body. Fatigue develops, muscular and joint strain ensues, and displacements and deformity occur.

damage. Arthritis, that chronic disease that yearly causes more economic loss than either heart trouble or cancer, is ever ready to develop in any joint that is suffering from chronic or sustained strain. Continued faulty posture may then contribute in large part to the development of spinal arthritis.

Due to increase in the spinal curves and forward tilting of the pelvis, the weight of the trunk is improperly received on the hips and lower extremities. Strains of the knees and feet result. Fallen arches and footstrain as well as backache are common complaints and are frequently seen in association with poor body mechanics.

But besides requiring support, the body must live. It must have oxygen, assimilate food and eliminate waste. This is performed by the lungs, the circulatory system and the abdominal organs; and if the body is held in proper position, the work can be accomplished much more easily and effectively than in poor posture, because the organs are not working against odds due to displacements and strains.

Respiration and the distribution of oxygen to the structures of the body depend on the action of the diaphragm and the circulation of the blood. The diaphragm is the great dome-shaped muscle of respiration. It separates the chest from the abdominal cavity and on its upper surface supports the lungs and the heart, which is also attached to it. In respiration, it moves downward and upward, making the chest cavity larger and smaller, thereby allowing air to pass alternately into and out of the lungs. The depth of the respiration and the degree of aeration of the lungs depends directly on the size of the movements of the diaphragm. In good posture, the diaphragm is held up in place, and its excursions are full. In poor posture, the drooping ribs and relaxed abdominal wall allow the diaphragm to sag downward, in which position its movements are made much smaller and less powerful. Breathing is therefore shallow, and aeration of the lungs is incomplete. This means less oxygen for the body and consequently lowered endurance and vitality.

Adequate circulation of the blood depends on proper function of the heart and full use of the diaphragm, which by constantly changing pressure in the chest cavity in respiration exerts a pumping action on the return flow of venous blood to the heart. In poor body mechanics, the movements of the diaphragm are small, and this beneficial action on the venous blood flow is greatly diminished. The heart then fills more slowly, and back pressure and congestion develop in the great thoracic and abdominal veins. This produces a retardation of circulation and builds up an increased resistance, which can only be overcome by constant increased effort of the heart. This added burden lowers the working margin of safety of the heart and predisposes it to strain and injury.

Faulty posture also directly affects the function of the heart by displacing it. The sagging diaphragm pulls the heart downward and creates a vicious drag on its great vessels and controlling nerves. The flattened and depressed chest forces it against the spinal column behind and mechanically restricts its freedom of action.

Thus, through the alterations that it produces in the respiratory and circulatory systems, poor body mechanics may have far reaching effects on your general health.

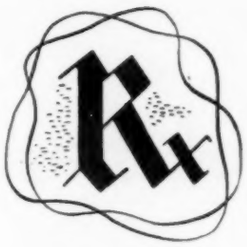
Nutrition of the body and removal of its waste products are functions of the great abdominal organs. These are situated in the abdominal cavity and are subject to pressure from above. Faulty posture, by depressing the chest and lowering the diaphragm, increases this pressure and forces the abdominal organs downward. Displacements result, which can only hamper function.

The liver and stomach are pushed downward and the transverse colon drops toward the pelvis. The upper end of the stomach finally lies at a much lower level than its opening into the small intestine, and so difficulties in discharging ingested food into the intestine are produced, which may result in symptoms of chronic indigestion. The liver, in descending, rotates and alters the position of the gallbladder, making it more difficult for it to empty. Slowing of the flow of bile occurs, which may contribute to the formation of gallstones.

The general falling of the upper abdominal organs drags the great abdominal artery across the pancreas, whose function is to furnish an important digestive juice and to regulate carbohydrate utilization. Congestion, inflammation and even permanent damage may follow this abnormal pressure; it may even result in permanent disorders of digestion or perhaps become a factor in the development of diabetes.

The dropping of the diaphragm and liver also displaces the kidneys, and irregularities in their function may occur, which will interfere with the proper elimination of waste products and impurities from the blood. The sagging colon produces angulations in itself, which greatly interfere with the onward passage of food residues. Constipation with all its attendant ills results.

The pelvic organs of reproduction are not exempt from the effects *(Continued on page 740)*



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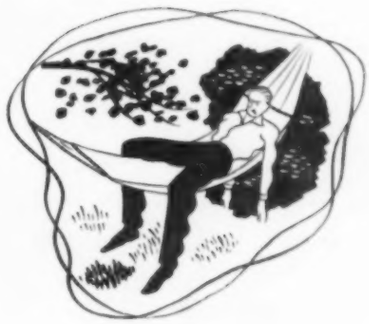
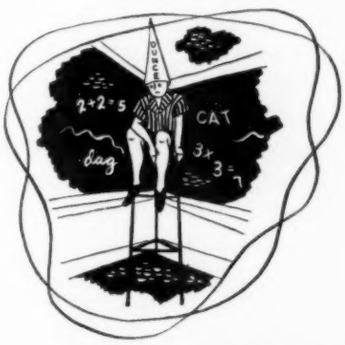


WHEN FATIGUE IS IGNORED, it frequently results in severe and prolonged complications, which may disturb one's entire life. Fatigue may produce neurotic symptoms in an otherwise normal person, or it may cause aggravation of neurotic traits that are not manifest when the person is rested. Merrill Moore, M.D., brings to HYGEIA readers an insight into the problems surrounding these highly difficult situations, which are so common that they are often thought natural. Dr. Moore is an Associate in Psychiatry at the Harvard University Medical School.



A GOOD MANY PARENTS may think their children are remarkable! Their children will more likely be remarkable if they teach them the meaning of discipline! Thus, a school principal, Haydn S. Pearson, speaks to parents who send their children to school with the smug belief that it is up to the school teachers to make good children out of their offspring. The article is entitled, "A School Man Looks at Parents."

"THE URINALYSIS SHOWS SUGAR!" How many times have you heard that and wondered just what it meant? One time, a man who was applying for a life insurance policy was faced with this announcement, and he too inquired of its specific meaning for himself. After a confirmatory blood test, he was told that it meant diabetes.

Sitting in his doctor's office a year later, he had the great pleasure of hearing another verdict: "Your diabetes is now arrested." Frank N. Allan, M.D., tells HYGEIA readers what orders this man followed to achieve this result. Watch for this article: "Is Diabetes Curable?"

DENTISTS ARE NOT SADISTS, your popular notions to the contrary! They do not revel in the pain they know they cause you sometimes, and your groans and shrieks of pain do not warm the cockles of their hearts. The fact is that a patient's sullen complaint that he is being hurt upsets the dentist to the extent that he loses a good deal of his efficiency. For this reason, if for no other, he will do everything he can to deaden much of your distress; Fred R. Adams, D.D.S., will tell you how this can be done in his article, "Modern Dentistry Is Painless," which will appear in next month's issue.

OTHER FEATURES of the September issue will be "Cancer" by Emil Novak, M.D.; "Physical Preparation for Pregnancy" by Miriam T. Sweeny; "Food for Children" by Edwin F. Patton, and more about "Nervous Habits in Infants" by William I. Fishbein, M.D.

What would have happened if Adam and Eve had planned their diet according to the advice of interested propagandists?

The Art of Eating

Your weight and your welfare depend on your proficiency in wielding the fork. **By SOLOMON STROUSE**

HAVE you had your vitamins today? Have you aided digestion and gotten a lift from an after-breakfast cigaret? Are you going to have a cough drop containing vitamins? Perhaps you will forget about vitamins until supper and then imbibe them with a bottle of beer. And surely you will not forego the pleasure of a dive in the alkaline tide. When your doctor told you to eat little red meat, did you plan lamb chops for dinner? Possibly you have carefully arranged your meals so that at no time will a meal contain protein, fat and carbohydrate all at once. I wonder what would have happened to the human race if Adam and Eve had planned their meals according to the advice of advertisers and propagandists. There is no record in the Bible of having either dietitians or trained advertising specialists prepare the menu of manna for the children of Israel.

This diet matter needs debunking. Full of mystery and ignorance, the field has been propagandized and faked to such an extent that a gullible public seems more ready to follow food fads than sound common sense in the choice of what they are to eat. Food requirements of the human body are simple, and in times of plenty the demands can be met simply. Yet both faith and stupidity have led us astray—faith in what anybody chooses to tell us and stupidity about simple fundamentals.

The human body is a piece of machinery which requires fuel. Unlike a machine made of metal, it will burn itself out and thus stop working, if not given fuel. The main articles of diet and their use by the body can be stated in a few words. Protein, fat, carbohydrates, water, minerals and vitamins are necessary parts of the normal diet. A calory is not an article of food; it is merely a measure of the energy value of the food. There is no need to memorize the constituents of various foods. Books and cards are available for that purpose. And it is really not necessary for the average human being, living a normal life without illness, to know more than the simple fact that a diet containing milk, fruits, a variety of vegetables, bread and butter, some meat and an egg or two daily will pretty well cover most of the fundamental nutritional requirements for proper living.

Contrary to a frequently expressed and more generally held opinion, the development of food habits depends on many more things than food charts. Assuming that there is an available supply and sufficient funds with which to buy food, it is a fact that most people will not only eat enough but will choose wisely the foods needed for proper living. Among the many factors controlling the choice of food may be mentioned first, of course, the available local supply. Formerly this was considerably more important than it is today; thanks to improved methods of freezing or canning and rapid transportation, foods grown in one part of the country are readily available in another. Still, it is usually cheaper to buy local products, and it will be noticed that fresh fruits and vegetables are a more common staple of diet in the state of California than they are in Siberia or Alaska; by the same token the inhabitants of Los Angeles seldom eat whale meat or whale fat.

Heredity and the effects of years of family food habits also play important roles in the choice of foods. In the face of the long inherited tendency of the Slavic races to eat rye bread

and of the Italians to enjoy spaghetti, the regimentation of carbohydrates so that all good American residents must eat pie is hardly logical. The food values of pie, spaghetti and rye bread are nearly equal. The choice depends on custom and taste. In addition to the environmental supply and traditional influences, the choice of foods is largely dependent on the ability to pay.

Recently an expert student of nutrition analyzed the effects of the depression and relief on the nutritional status of the American people. He found practically no effect. There has been no increase in malnutrition; likewise, the numerous physicians who took part in the sur-

While the choice of specific foods largely depends on the ability to pay, most persons will not only eat enough but will choose wisely the foods each needs for his individual welfare.

vey found no evidence of the diseases resulting from malnutrition. The food supplied by relief agencies has been carefully standardized in order to give the greatest value per dollar. The establishment of food values on the basis of money invested is one of the most important factors in dietary control. This is true of all the elements of food. When the price of hogs is high and cattle low, beef will furnish more protein and fat per dollar than will the lowly pig, and when the beef is cut up and the tenderloins are sent to the best hotels, there are still many dollars worth of the less majestic portions of the animal which yield an equally satisfactory amount of food for a much smaller amount of money.

With these preliminary generalities out of the way we might well discuss a little more specifically the ingredients of a normal diet. Bread may be the staff of life, but protein is an absolute necessity in every one's diet. Nothing can replace protein, of which a certain minimum is necessary to repair the waste caused by the daily use of the human machine. This protein is available in many foodstuffs but is a particular constitutent of animal food. It is still questionable whether protein from vegetable sources is fully equivalent in replacement value to protein from animal sources. Vegetarianism is therefore not good dietetics. The amount of protein required varies tremendously, and apparently the possible range of normal consumption is extremely wide. Investigators have shown that men weighing 150 pounds can get along on as little as 1 ounce of meat daily. But on the other hand, the Arctic explorers who were studied in Bellevue Hospital in New York City showed no harmful effect from an almost pure meat and fat diet. For some unknown reason, modern man has adopted the doctrine of fear of protein, and it is a popular fad to refrain from eating meats, especially the so-called red meats. I am not sure what caused the overdevelopment of this tendency; probably it is the result of tradition, bad advice and propaganda. Without the slightest proof in the world, it has been asserted that red meat is harmful for rheumatism [sic], for high blood pressure, hardening of the arteries and many other things. Since so many people have these complaints, and since the rest of the world listens too freely to the propagandizing efforts of their friends, it seems that the fear of red meats has been the result of mere ignorance.

Regarding fats and carbohydrates which are, after all, the main fuel supply, the proportions necessary for normal living may vary tremendously. Fats are used in localities where fats are cheap, and carbohydrates are chosen in lands where cereals and fruits are plentiful.

Necessary as are the minerals and vitamins, nature pretty well takes care of these whenever a broad supply of food is available. After the discovery of the preventive role of fresh fruits and vegetables in scurvy, the disease disappeared from ships and prisons. Beriberi has been disappearing rapidly since the vitamin value of cereal husks has been understood. When milk, cream and butter are used as they are in the average American home, other necessary vitamins are supplied. It really does not seem necessary to mix vitamins with cough drops or beer.

Mention has been made of a current fad which recommends that none of the main dietary constituents be mixed with another at the same time. Many followers of this sect have the fanaticism of a religious zealot but forget entirely that in nature there are mighty few "pure" foods. Meats contain proteins and fats. Vegetables contain protein, fat and carbohydrate. So does milk. If nature intended foods to be individual entities, why does she not provide them for her sons? Absolutely not the slightest bit of scientific evidence has ever been adduced to prove the value of this foolishness.

The volumes one reads and the speeches one hears about the calory sound like the preface to a new religious cult. The calory is nothing but a name indicating the fuel value of any combustible material such as coal, wood, petroleum or food. In the mechanics of the human body heat units are supplied by food. A given number is necessary to maintain living at a given standard; the principle operates on the physical basis that the more active the fire, the more calories necessary. In the healthy human body the best index of caloric sufficiency or insufficiency is body weight. If you are maintaining your body weight you are eating enough calories. If you are losing weight, it means that you are burning more energy than you are taking in, and that, of course, means insufficient calories. But when you are obese and can't keep fat off the hips and thighs it means that you, of all people, are eating more food than you need. Varnish this statement any way you want. Obscure it with the mysteries of endocrinology; fake it with the atrocious claims of special foods, and still the hideous monster of personal overweight rears its head to laugh at you. In other words, and in plain English, you are overweight or underweight because you eat too much or too little, and you will never gain or lose weight unless food habits are changed accordingly. *(Continued on page 751)*

R. I. Nesmith

CAMP COUNSEL

Variation in activity makes an adjustment in nutrition necessary, as LAWRENCE RIGGS proves in the second instalment of his article

REST, exercise and nourishment are essentials to life. If an army can travel on its stomach as Napoleon thought, boys and girls surely must be able to camp on their stomachs.

Indeed, since food represents a chief source of energy and is so freely expended in camps, the source of supply must be kept adequate.

Out of the great store of information about foods and nutrition that should be at least in part understood by the camp director or by the cooks, preferably by both, this article will point out only a few items for purposes of calling to mind some important implications for camps regarding food and eating. According to J. F. Williams, in "Personal Hygiene Applied,"

> Foods vary in their chemical composition. They also vary, therefore, in the service they give to the animal economy. It has been customary to classify food in terms of the food elements in different varieties of food, but the newer knowldege of nutrition has emphasized certain food factors that are essential for maintenance and growth. A functional classification is to be preferred because of this fact, and also because of the hygienic implications involved.

Foods can do three things: they have the power to yield energy, to build tissue and to regulate body processes.

> Continuing the discussion the same authority says: It should be noted that some examples of food combine all of these characteristics. Thus, milk and eggs possess all the above powers. Good human milk alone is entirely adequate for infants. Many different foods are both yielders of energy and builders of tissue. Many possess the power to regulate body processes. Combinations are essential to secure the three values in the proper proportion.

Foods yielding energy include carbohydrates, fats and proteins. Carbohydrates and fats are the main sources of energy in daily life.

Foods to build tissue include principally the proteins. Meats furnish an important source of protein and should be included in the diet at least once a day as an optimum for growing children. There is a great deal of discussion by some persons on whether to include meats in the diet, but the general belief of unbiased writers seems to be that meat is valuable in the dietary as stated.

Foods regulating body processes include the vitamins.

In view of these facts, then, it would seem that a diet composed of meats, eggs, milk; green vegetables, fruits, with allowance for whole wheat or other grains would be essential for the growing, active child.

When measured in terms of its heat-producing power, we speak of the caloric values of foods or of the amounts of calories contained in them. The thing that makes food of value to the body is this heat-producing power—its caloric value. Thus, in camp a balanced diet in terms of the functions of foods is a necessity, as well as a diet balanced in terms of caloric content.

Tables giving average total energy needs of children based on average weights and also giving distribution of food classes have been compiled by Mary Swartz Rose and are reproduced here as tables 1 and 2. Where the camp dietary standards do not comply with these requirements, it shows that children are being underfed. Under conditions of more than normal activity (such as in camps) 5 per cent of the normal requirement as given in these tables should be added.

TABLE 1—*Average Total Energy Requirements of Children Based on Average Weights*

Age	Calories per Day	
	Boys	Girls
3	1,100-1,400	1,050-1,350
4	1,200-1,500	1,150-1,400
5	1,300-1,600	1,200-1,500
6	1,500-1,900	1,450-1,800
7	1,600-2,100	1,500-1,900
8	1,700-2,300	1,600-2,200
9	1,900-2,500	1,800-2,500
10	2,100-2,700	1,900-2,600
11	2,100-2,800	2,000-2,800
12	2,300-3,000	2,100-3,000
13	2,500-3,500	2,300-3,400
14	2,600-3,800	2,400-3,000
15	2,700-4,000	2,400-2,800
16	2,700-4,000	2,200-2,800

TABLE 2—*Distribution of Kinds of Food Needed (Rose)*

	Per Cent of Total Calories from Each Class of Food					
Age	Food from Cereal Grains	Milk	Vegetables and Fruits	Fats	Sugar	Eggs, Cheese, Meat and Other Flesh
6- 7	20-25%	40-45%	14-15%	10-12%	3-4%	4-5%
8- 9	20-25	38-42	15-16	12-13	4-6	5-6
10-12	20-25	34-38	17-18	13-14	6-8	7-8

	Per Cent of Total Calories from Each Class of Food					
(13-18 Yrs.) Calory Requirement	Food from Cereal Grains	Milk	Vegetables and Fruits	Fats	Sugar	Eggs, Cheese, Meat and Other Flesh
2,000	16-18%	30-33%	18-20%	15-16%	10%	10%
2,500	18-20	24-25	18-20	16-18	10	10
3,000	20-22	22-23	18-20	16-18	10	10
3,500	24-25	18-20	17-18	17-18	10	10
4,000	25-26	16-18	16-17	17-18	10-12	10-11
5,000	27-28	15-16	16-17	17-18	10-12	11-12

From "A Laboratory Manual for Dieticians." Mary Swartz Rose, Ph.D Third Edition. The Macmillan Company, 1929

Quoting from a report as to Minimum Health Standards for Recreation Camps the following good advice generally holds:

The doctor or dietician should aid the chef in planning well-balanced meals.

The following rules should obtain:

Plenty of fresh, pure water—tested before camp opens, and if source is other than closed spring or well, tested during camp period preferably at intervals of two weeks.

Plenty of fresh, pure milk (pasteurized or certified).

Vegetables every day.

Green vegetables at least three times a week.

Fresh dairy products: eggs, butter and cream.

Fresh meat once a day (or fish).

No serving of kept-over or possibly tainted food that is not passed by inspection of the doctor. (There is no excuse for food-poisoning or botulism in a well-run camp.)

Food storage should be sanitary and coolers should be adequate.

If you have campers of different ages, remember that a diet of minimum caloric value sufficient for young children should not be standard for the entire camp, but should be increased for older and more active children.

Note: Fresh nourishing food has always been the cheapest in the long run.

It ought not to be necessary to point out that economy in food may be a good thing up to a given point but that on the whole it is not wise to cut camp expenses by cutting on the food.

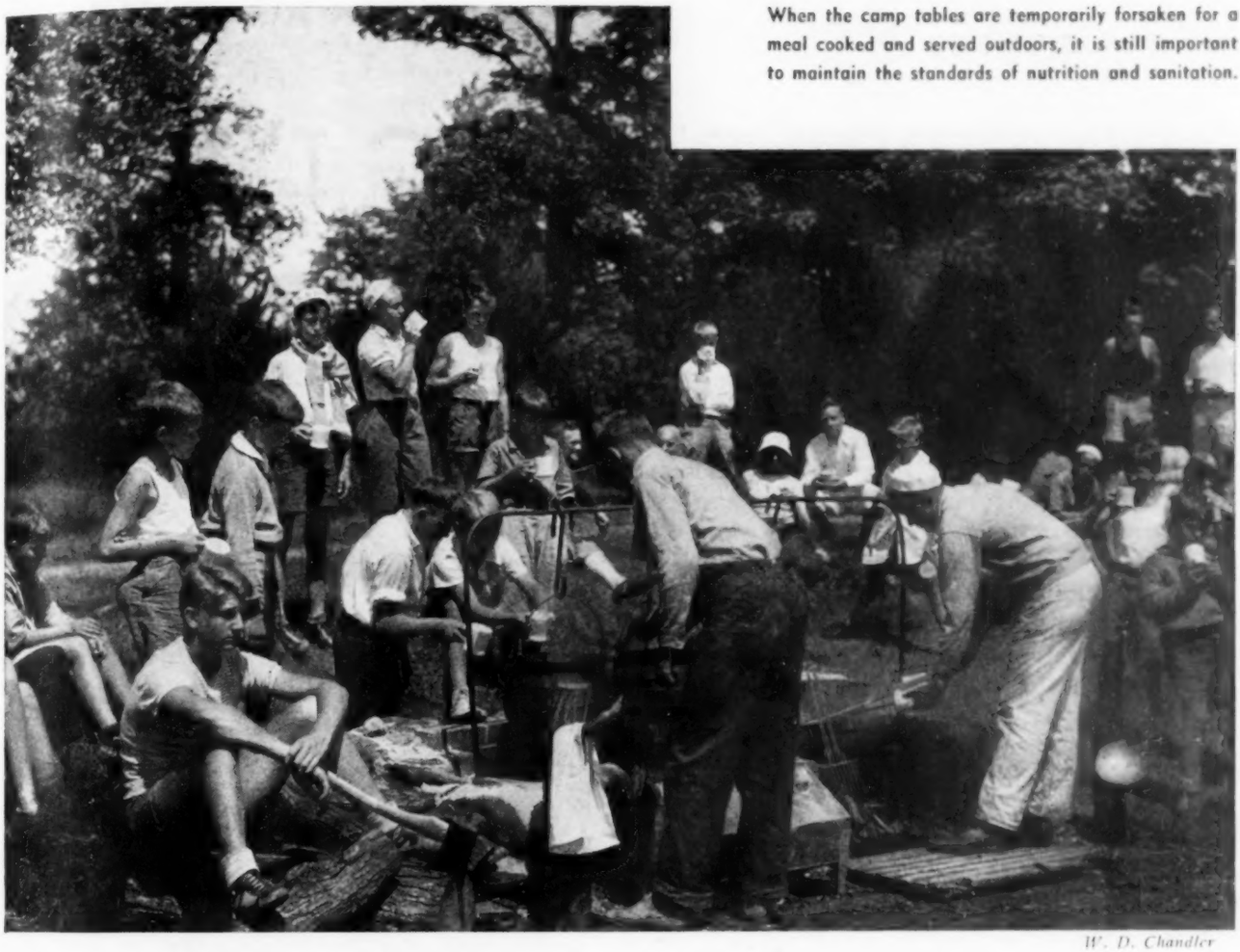
Food may be furnished in ample and adequate amounts and be of the proper kind; but if it is not properly or appetizingly cooked, it may lose all its value. Thus, great care should be taken in selecting only experienced cooks of good reputation for camps.

The policy as followed in some camps of allowing the boys (or *requiring* them) to cook two meals a day by cabin groups and to get one meal a day from the camp kitchen is to be doubted as good policy over a period of time—say, for even over a week. Cooking should be a part of camp experience for all campers, to be sure; but in a large camp where the stay in camp is a week or over, the regular cooking of meals may work to a detriment of the campers' health if not done under most careful supervision. This is difficult to guarantee if the boys or girls are responsible for their own meals.

If adequate food is given campers, packages from home should be discouraged, especially those containing candy. Nuts, cookies and such may be of value; but if a good diet is given in camp, candy should be cut down to a minimum, and preferably to be allowed only after meals. So the practice as generally followed in camps of limiting the purchases at the camp candy store is an excellent help toward preserving health.

Meals must not be rushed and must be eaten in the least crowded conditions possible. Camps that take on at meal times the appearances of a general food riot are contributing to all sorts of possible ill effects and to the lessening of the beneficial values of the food that is eaten by allowing such a condition to exist. Leisurely meals, happy times of real enjoyment with no pressure to finish in a hurry and with the least confusion, make for better food consumption and digestive activity on the part of each person eating.

Counselors can perform a great task of helpfulness by being alert to the food habits of their campers.



When the camp tables are temporarily forsaken for a meal cooked and served outdoors, it is still important to maintain the standards of nutrition and sanitation.

W. D. Chandler

An agreement as to compelling campers to eat foods should be reached among the counselors as a part of camp policy, and it is a highly important part. In one camp the decision was made that the matter could not and should not be arbitrarily laid down in a rule, but that the counselors should be alert to see whether refusal of food was because of actual distaste for the food, in which case forcing of eating would be most unwise, or whether it was a matter of poor food training, stubborness or "choosiness," in which case certain tactics suitable for the particular individual might be followed.

Forcing of eating was deemed unwise in any event. Good-natured coercion on a "kidding" level with a touch of seriousness has been found to work in many cases. In others, just firm insistence, but not forcing, has worked. It is a matter that has to be worked out individually but should be observed carefully by counselors, for if left to themselves, campers are likely to eat unwise quantities of a narrow range of foods.

Social pressure, custom or tradition here again may operate to play a great part. If it is the custom to eat at least a little of everything, the camper, facing the desire for social approval, often learns to eat a food that he otherwise would not eat.

It is not only a waste of time and money as well as effort, but it is misrepresentation in a very real way to advertise that the camp's menu is made out by a dietitian (as it might be) but then disregard that diet even in a general way after getting to camp. Changes have to be made due to circumstances, of course, but in general the balance ought to be kept and the diet followed as closely as possible. What the cook *thinks* would be good to eat and what is dietetically of *value* might be two different things. This point bears watching.

Thus in the realms of rest, exercise and nourishment in camp, there are responsibilities of an important character that must be met by camp directors and their staffs if a more positive health program is in reality to become a part of camp life.

To the end that these principles of hygiene be observed, there must be in summer camps intelligent anticipation, resulting in alert planning which will meet the needs of each individual camper as he comes to camp.

[Conclusion]

By DON C. LYONS

HIS FIRST DRIVING LESSON

"DAD, tomorrow I'm 16," Junior suddenly spoke up, interrupting Dr. Smith's enjoyment of the evening newspaper.

"Yes," Dr. Smith answered abstractedly, still deep in the day's news. He had just completed reading the statistics compiled by H. M. Johnson, research associate for the Highway Research Board in Washington, D. C. The figures showed that drivers between the ages of 16 and 20 kill twice as many persons in highway accidents as an equal number of average motorists and presented figures to show that two fifths of all accidents are caused by less than 4 per cent of all drivers, indicating that accident repeaters are a serious highway menace.

"—and you promised to teach me to drive the car when I became 16," his towsled haired boy continued.

"That's right, I guess I did," his dad admitted very reluctantly as he put down his paper, suddenly thinking of the dangers his son would

be exposed to while driving, the words he had just been reading fresh in his mind.

"Well—how about it?" Junior wanted to know.

"I won't go back on my promise," Dr. Smith finally told him, knowing that advice is not accepted by sons when it is given as a warning.

"Wow-ee!" the boy yelled in excited anticipation.

At that moment the telephone rang. Mrs. Smith answered it.

"It's the hospital. There's been an auto accident."

"Tell them I'll be right over," Dr. Smith said as he dropped his newspaper to the floor and knocked the ashes out of his pipe. "Son," he said as he slipped on his coat, "you start your driving lesson right now. Get your hat. We're going to the hospital. You may learn something about driving, which to me is the most important part."

Dr. Smith and his son were met at the door of the operating rooms' corridor by the night supervisor of nurses. There was a stain of crimson blood on her otherwise crisp white uniform, where a spurting blood vessel of one of the accident cases had sprayed.

"A bad one, doctor," she said. "Two cars crashed out on the state road."

"How many hurt?" Dr. Smith asked as he hurried towards the dressing room.

"Six, all young people," she said. "Two were dead when they were brought in."

"That's terrible. Fix my son up with a visitor's gown," he requested as he disappeared in the doorway of the doctor's room. "I'll be ready in a moment."

Junior Smith looked around curiously, while white gowned nurses and uniformed interns hurried back and forth. There were several piles of torn and blood-stained clothes thrown against the corridor walls where they had been dropped in the emergency of torn scalps, deeply lacerated legs and arms and broken bones. A trail of blood spots dotted the floor from the elevator door to one of the operating rooms. Some one was moaning in one of the rooms at the end of the long hallway. He wished his father would hurry.

A pleasant faced young nurse stepped up to him just then, told him to hold out his arms and slipped a white gown around him. He thought how professional he looked as she walked behind him and tied the gown on. He wondered what to do with his hands and stood looking rather woodenly at them, until she told him to keep them behind his back. His father came out of the dressing room then and told him to follow.

"We'll take care of this patient first," Dr. Smith motioned him to come into the operating room where a girl with curly brown hair lay on the table, her eyes closed, her face strangely bluish white. A tattered pink lace evening dress showing deep red stains lay tossed on a stool in the corner.

"This girl," Dr. Smith told his son, "has a compound fracture of her pelvis, a broken leg, basal skull fracture, fractured fifth vertebra and internal injuries," he continued, glancing at the chart one of the nurses was filling out. "Her chest was crushed."

Junior Smith wasn't sure what it all meant; but he knew it sounded bad, and she looked worse. A wave of horror and revulsion swept through him.

"She hasn't much chance," Dr. Smith continued, trying to make his voice casual as he looked at the young girl lying too still on the table and thought how wasteful young life was.

Just then the intern who had been holding a stethoscope to the girl's chest straightened up and put the instrument into his jacket pocket.

"She's gone," he said pulling up the white sheet and covering the face which still mirrored the pain the girl had been suffering.

In operating room B another young girl lay on the table. She was still partly dressed, for harried student nurses had not completed the removal of her torn mussed clothing. Her blue gown was ripped to shreds; one shoe had dropped off, the other, dirt and grease smeared, still hung to a twisted foot. Clotted blood mixed

with road grime covered her torn right leg and arm where she had slid along the roadway.

She groaned through swollen torn bruised lips, as Dr. Smith gently straightened the twisted leg.

"Her face is crushed, and she has a broken leg besides the abrasions," the intern stated.

"Call the oral surgeon," Dr. Smith suggested as he looked at the distorted blood caked face, "perhaps he can do something later about reconstructing her face. She's had all her front teeth broken out."

"She was such a beautiful girl, too," one of the nurses spoke up. "I knew her in school; she was so proud of her perfect teeth."

"Looks like artificial teeth for her now," the tall intern said.

"Get an x-ray of that leg, and we'll see about setting it. There are apparently no other injuries." The girl continued to moan with pain. "Better give her another hypo," Dr. Smith ordered.

"The boy in operating room C is going out, I'm afraid," a sandy haired intern interrupted from the doorway. "He has a bad skull fracture. Blood pressure is going up, and his respiration is getting awfully shallow."

"I'll be right there," Dr. Smith stated. "Come on son. We'll do a decompression right away," he continued after he had examined the patient, a boy of 19. "That's his only chance. Shave his skull while I scrub up," he told the surgical nurse.

"How's the other boy?" Dr. Smith asked the intern as he scrubbed.

"Just some cuts and bruises."

"Have him sent to x-ray while we take care of this skull," Dr. Smith said, turning to the dark haired intern.

Junior Smith had been following his father closely, wide eyed, a tight knot in his throat, watching the skilful administration of treatment to the smashed bodies. He tried to assume a composure that his white face and staring pupils belied. The tragedy and pain he was seeing was something entirely new to him. His father's patients had heretofore been something entirely remote, as though of another world. Now they seemed real for the first time.

One of the nurses wiped the bared scalp with alcohol and painted it with a yellow colored antiseptic solution. Dr. Smith picked up a scalpel, his surgical knife. Soon the bone lay bare, the covering stripped back. With a circular bone saw and bone cutters he opened a window in the skull, exposing the membrane covering of the brain itself, finally uncovered a thick blackish purple clot of blood. This removed, the young man's pulse picked up, rallied and steadied. Slowly the blood pressure went down. After the required dressings were placed, the boy was wheeled from the operating room, now with a fighting chance for life, if infection or other complications did not develop.

"Now son, I'll set that girl's leg, and we will have done all we can tonight," Dr. Smith said to his son who had been standing quietly behind him, trying to hide the nausea he felt.

An hour later they were driving homeward.

"Son," Dr. Smith said. "There's your first driving lesson. That's the only one I'm going to give you personally."

Junior looked at his father in surprise.

"Yes, you can pick up the few mechanical tricks of making a car move, and the police will teach you the traffic laws when you apply for your driver's license."

"That was a terrible accident," Junior said, little thought of driving automobiles in his mind at the moment. Vivid pictures of the injured young people were still flashing through his thoughts.

"Yes, it was. I don't know who was to blame—the inquest will decide that—but it may teach you one of the most important lessons in driving an automobile."

"And what's that, Dad?"

"Don't try to do the other driver's thinking for him. You can't be a mind reader. Do your own thinking, and you won't end up in one of those operating rooms some night. Don't take a chance, when a thought will prevent an accident."

Joe McGee at the Crossing

The policeman at the crossroads
Is a friend
Of boys
And girls

And my favorite traffic cop.
His name
Is Joe
McGee.

His whistle is fine for blowing
And his club
Was made
For twirls.

And he makes the traffic stop
When he sees
The likes
Of me.

By ANN CHIPLEY

The FAMILY HELPS the SPASTIC CHILD

By BELLE McKINNON

ALL was not well. Our baby was not gaining and growing as a newborn baby should do. The tiny hands were always drawn up inside the little sleeves, no matter how often I drew them out. That was the first sign. Then gradually our suspicions became confirmed that our child was going to be handicapped.

At the age the normal baby reaches for a toy or rattle when held out to him, our baby's hands drew back instead. When she did make an effort to grasp a toy, she trembled all over.

The next step in the normal baby's development, that of sitting up alone, found Kay unable to sit erect or hold her head steady. It was even impossible to prop her up with pillows. She fell over constantly, at times striking the back of her head on the floor. We began to think out ways and means to meet the emergencies in each milestone of her life.

Kay was intelligent we knew. She had a happy disposition and tried to greet every one with a smile. It was our desire to raise her as nearly normal as possible.

We padded her high chair, nursery chair and carriage, so the constant jerking of her head would not injure her; it protected her as much as possible from fright. I noticed when placed on a bed or in her carriage, Kay seemed to have a sense of falling: She would grasp at things wildly with her hands. To overcome this and give her confidence, I would place my face against hers and keep it there until she was lying flat. Gradually she seemed to overcome that sensation.

When Kay should have been creeping but could not even sit alone on the floor, my husband bought a small "kiddy-car," made with two wheels in back and one in front. He removed the two back wheels and placed them much wider apart, so the little car could not possibly upset. We placed Kay on this and taught her to grasp the handle bar. She gradually became adept at moving about the house on this car. Kay slowly learned to sit erect on this little car and could then be placed on the floor, where she learned to move about by hunching herself along, first one leg, then the other.

The control of the finer finger movements were extremely difficult. It was almost impossible for her to pick up anything from the floor; so to encourage her to use her hands, a basket of toys was kept on the floor, mostly balls and blocks of different sizes and shapes but without sharp edges. At some time during the day, some member of the family would sit on the floor and play with Kay. All the toys would be dumped on the floor; then Kay would be asked to pick up each article. In this way she learned the names of toys and how to use her hands. Of course, she was very happy in our praise.

The muscles of the back, especially those along the spine, and the legs and arms were gently massaged every day, and warm baths were given every night.

We learned early that it required the greatest of patience and self control to do good work with Kay. We learned to discipline her gently, for sharp speech or quick movements seemed to make all her movements "wilder" than usual. She was always close either to tears or laughter, and it took years to teach her to control her emotions and to cultivate poise.

Our other daughter, older by seven years, was a wonderful companion and help to Kay. She disliked having any one speak of Kay as crippled, and through her the little sister was given normal play and recreation; she included her in almost everything she did.

One of the most difficult things for Kay to learn was to feed herself. She was given her own silver and plate. At first she would eat a few bites and then beg me to feed her, as it was a great effort to try to get the food to her mouth. I always helped her finish, for we did not want anything we did for her to become irksome. Then, too, we wanted to be sure she had sufficient food. By doing this at each meal, she learned to handle first a spoon, then a fork and the drinking glass. But all this took months of patient practice.

Kay's right side seemed to be a little worse than the left, so she used her left hand. We did not try to change her but encouraged her to use both hands as much as possible.

Three years passed by, and Kay was unable to stand alone. Never undaunted, we still hoped to do something about the walking. My husband built a sand pile and a play pen for Kay so that she could be out in the air and sunshine as much as possible. Then we bought a baby walker for Kay; although it held her up, there was no control to her movements, and she hit everything in her path. One thing she did learn in this walker was to lift the front up to pass over rugs.

One exercise Kay never tired of was stepping on and off a small stool, while we supported her by holding each hand. She learned from this to lift up her foot instead of drag it. At this time, Kay wore "corset" shoes to support her ankles; but no other braces were ever used on her.

Kay's Daddy came home one day with a surprise, a little tricycle. She was thrilled and to our surprise learned to ride in a short time. Of course she had many "spills," because the least excitement that caused her to turn too short or lose control caused an upset.

Coordination seemed to be developing a little more definitely, and one evening Kay pushed her carriage across the room all by herself! From this time on, she developed an unsteady sort of a walk, staggering and falling often but always getting up on her feet again.

Swimming classes twice a week and vacations spent near water showed so much improvement that we built a small swimming pool in the backyard at home.

The cement pool, oblong in shape with rounded corners, was 24 feet long, 8 feet wide and a possible depth of 5 feet. Half of the pool was below the surface, and the dirt excavated was used to bank the walls; the family gathered rocks and planted shrubs to make it ornamental as well as beneficial. It was enjoyed by all members of the family. Kay spent hours each day learning to swim, and the pool was shared with her friends, thus providing the companionship of children her own age.

Exercise was all important in Kay's regimen. She learned the use of her muscles first by such tricks as stepping on and off a stool. Then we built a swimming pool in the backyard, which not only stimulated her muscles but brought many new friends.

Hand and finger exercises were being encouraged, too. A blackboard and chalk were found helpful, as were colored blocks for building and wooden peg games. Marbles also afforded excellent opportunities for finger exercise. Noting Kay's keen interest in games, she was taught to play fair, to be a good loser and never take advantage of her handicap to win or have her own way.

When a normal child becomes tired, he usually relaxes and rests. Just the opposite was true of Kay. When she became weary, both nerves and muscles ran wild, and we found the most effective means of quieting her was to read aloud from her favorite books.

We were happy in the progress Kay was making; she was gaining in health, growing taller, and though she was unable to dress herself, she was learning to lace her shoes. Kay's speech had not improved a great deal, although the family could understand her. Actually she had a good vocabulary and a retentive mind. She was by now attending Sunday school with her sister.

When Kay was 6 years old, the kindergarten teacher, being sympathetic and considerate, was willing to assume the responsibility of having Kay in her class. There was no other school except the public school, which was about two blocks from our home. Kay was unable to walk this distance but could ride her tricycle, and I took her to school and called for her when she was ready to come home.

We did not know how the other children would accept her but found them kind and helpful in doing little things she was unable to do for herself. We found ways for Kay to repay them. The school served milk in midmorning to underweight children, and each week Kay paid for some child who could not otherwise afford it. About once a month a movie was shown for the grade pupils, and there were always some who had no money for a ticket. Kay furnished a ticket, and the teacher had her choose the child who was to use it. The lesson she learned from this was to give as well as accept help from the other children.

Progress was highly satisfactory in this school. The teachers were interested in Kay, and each gave her as much individual attention as possible in a crowded public school. It was impossible for her to hold either her book or her head steady, so her lessons had to be read to her. When the teacher couldn't do this, she asked a pupil to read for her. Kay learned to cut and paste. Although she usually tore her paper by pressing too hard on her pencil, she could print some words and, strangely enough, make good numerals.

Out in the playground it was more difficult, because Kay was apt to fall at any time and thus interfere with the games. So she was left to stand on the sidelines with her little arms folded, a means she had found to give her balance. We hit upon a plan of giving her a little lunch to take to school every day in a paper bag. Since she shared this with the other children on the playground, they learned to look forward to it. This gave Kay a feeling of importance, greatly necessary at this time.

She was included more and more in the games and learned to play some of them successfully.

To look down from the top of any stairs caused a tenseness and fear that Kay could not control. To overcome this, we had a six sided rack constructed 10 feet high. It was on the order of a building frame, made of two-by-four planks firmly nailed from one post to another in an irregular manner. This offered a tempting place to climb. After being warned to be careful not to get hurt, permission was granted. The second day Kay could climb about two feet off the ground, and within two weeks she could climb without fear all the way to the top. The rack was then torn down, after having served its purpose.

In school, Kay passed along from grade to grade with the same group of children. Later she was transferred to a larger school along with this group. Here she became a little more self conscious, for the strange children often said unkind things and were apt to make fun of her awkward movements. Again the swimming pool played an important role, because after learning Kay had a pool, she became much sought after. Out of the group who wanted to swim, she gained some sincere friends and companions.

At the critical adolescent age, business reasons made it necessary to move from the town where Kay had lived all her life to a large city. We were thankful her social adjustment had been carefully constructed up to this stage. Because of her handicap, Kay was required to take an intelligence test in order to enter the public school. She passed this beautifully and was placed in one of the large grade schools where she had to compete with the physically fit youngsters and where there was not much chance of individual help from her teachers. But Kay was not happy.

The few young friends she knew lived some distance away, and there were no girls in the neighborhood. Kay was lonely. The neighborhood boys were thoughtless and unkind. They would mimic her speech and make fun of her movements. She dreaded to go outdoors.

Kay was now 13 years old, with a well developed body, unusually strong and muscular for a girl. This was probably due to her well balanced diet and the physical training she had been receiving all these years.

Careful consideration of this situation for some time offered no solution. Then my husband brought home a pair of boxing gloves and started to show Kay how to use them. Balance and how to hit with the elbows held in was the means of controlling wild swings. Kay's spastic muscles gave her a vicious punch, somewhat like a spring released.

After Kay learned to take a punch as well as give one, her father gave her these instructions: "You can now protect yourself. And the next time that you are annoyed by a group of boys, walk right into the crowd, choose the largest boy in the group, don't lose your temper, watch your balance and arms, and let him have it. Be sure that one punch does it. Smile at the rest of the crowd, and walk on. Your troubles along that line will then be over."

Two days later that very thing happened in the city park when Kay was returning home from school. After two such skirmishes, she gained the respect of the whole gang. Later they invited her into their stamp club, where she was the only girl member, and from this episode grew an interesting and educational hobby for Kay. She still collects stamps and has made many contacts and adult friends through this interest.

Kay had a typewriter but had never used it much; now, however, she was becoming more interested in it and would pick out a few words occasionally. My husband took a board about 30 inches long and 10 inches wide. He bored round holes about 3 inches apart in the board and placed letters above each hole in the same relative position as those on the typewriter key board. Pegs with tops of different sizes and shapes were used to spell out words, using first one peg then another to plug in the proper letter. This taught the position of the letters on the typewriter; the length of the board gave arm movement, and the different shaped peg tops necessitated finger movement according to the shape of the peg.

To give Kay more reeducation of her muscles, we took her out of school for a term and sent her to a physical training school. Her individual instruction located and corrected some faults. For instance, she had been riding a bicycle for years, but when she tried a stationary bicycle and was told to pedal backwards, it was difficult for her to get into reverse.

Kay's self confidence was being built up during this time, too. For her physical education she went to an adjacent city alone on the street car. This gave her a chance to make decisions for herself and meet competently new situations. She often visited the art gallery alone and would fall in with some group who was being shown through; and in this way learned about some of the things she was interested in.

Kay's stride was too long, and she walked with her feet too far apart, which was causing some of the ungainli- *(Continued on page 747)*

Serious students contemplate a model of an Eskimo village, showing how easily children at the museum learn of far lands. These two know all about igloos, kayaks and dog teams.

A Museum for Children

By CATHARINE KNEELAND

CAN subtle changes within a child's mind be expressed in motion pictures? Can a child's mental growth and increased adjustment to life be set forth visually?

This was the problem attacked by the Harmon Foundation in producing a motion picture to show what a children's museum does for its boys and girls.

More than a mere record of activities at the Brooklyn Children's Museum where it was taken, "The Child Explores His World," a two-reel 16 millimeter silent film recently completed, was designed to be a well conceived and thoughtful presentation for the public.

Such a film must point out the larger aspects of the work with which it is concerned. It must show the museum first as an educational institution acquainting children with the world outside their experience and therefore actually developing child minds, a process invisible to the observer. Yet the difficulty of visually expressing "education" to the public is slight compared with the difficulty of dealing with the museum's distinctive contribution: that its activities bring about wholesome habits of mental adjustment to life.

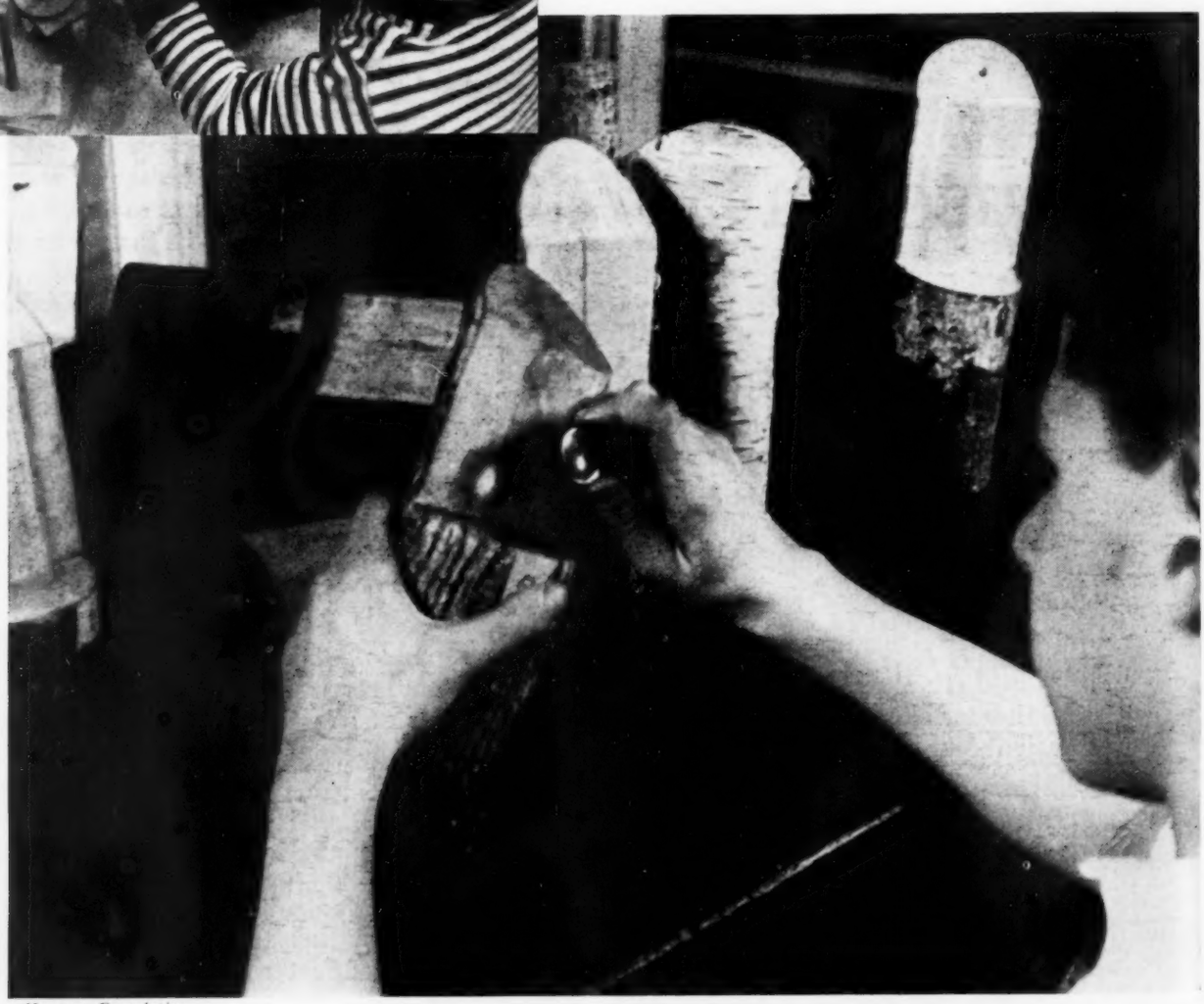
The difficulty of externalizing abstract social concepts on the motion picture screen is a very real limitation for all organizations endeavoring to present their work to the public through the film medium. It is a loss to the public as well, when the services of the organization are socially valuable. In view of the proposed use of motion pictures in interpreting the program and activities of schools, summer camps, playgrounds and other educational and recreational centers, the experience of the Harmon Foundation in producing this children's museum film looms significant.

A stimulating film such as this one, designed to encourage organizations and communities throughout the nation to create museums for children, should affect a rather select group—members of clubs, parent-teacher associations, schools, churches and the like. Its appeal should be to reason, rather than to emotion.

The younger generation builds for the future. They learn to use their hands and minds by doing construction work with woods.

In an intelligent, expositional approach, the producer is especially limited in that he cannot use the tricks of the dramatist's trade. In view of this, it is especially remarkable that "The Child Explores His World" shows the subject of children's mental development to be not too large a one for motion pictures to present effectively. Just how a child's growth, both in reasoning powers and in acceptance of social responsibilities, may be set forth is discovered from a consideration of the film.

The opening sequences show the cement and stone that surround the city child. Small feet are seen treading pavements, waiting at street crossings and running across paved playgrounds. City surroundings seem entirely man made. Even food seems manufactured: Milk appears only in its bottled form, as it is brought in from the doorstep each morning.



Harmon Foundation

A cross section of a piece of wood is handled expertly as this boy learns to differentiate between the grains and characteristics of the growth of trees in their natural habitat.

As a contrast to this type of life, the country child is shown in rural setting learning easily of nature's developments. Yet while he knows the "hows" of natural occurrences, he must still ask questions to determine the "whys."

Emphasizing the persistent questionings of young minds, of city and country children alike, a series of shots is shown in which children demand to know the "whys" of their experiences —*why* the rain falls, *why* the fire burns, *why* the grindstone grinds—questions which the average adult would be hard pressed to answer.

A children's museum is shown in the film to be a place where children from kindergarten age through high school can find answers to their questions. Child research at the museum is accomplished in terms of modern tenets of progressive education.

Modern educational methods are seen in action, as various stages in the study of botany are presented. Younger children begin to learn of plant life by putting together picture puzzles of flowers, which they must name when they have completed. Slightly older children take apart papier mâché flower models, whose petals are detachable and labeled. When they have shown that they understand such exhibits, they may take them home for further study. Children of all ages flock to the library to read about plants. Then they are ready to handle actual living things and to take field trips to see plants growing outdoors. They may listen to lectures or look at educational motion pictures of botanic specimens from remote lands. Finally, young artists draw the plants they have studied, young sculptors model them, and young authors write about them. Unconsciously, a science is mastered.

By setting forth the stages of development in the learning of such a subject, learning itself is made clear in pictures. Concrete demonstration in a simple and graphic form is the essence of effective visual presentation.

"The Child Explores His World" goes on to show exactly how geography is mastered. Children are seen tracing maps of various countries, learning the lateral extent of the lands. Next they build plaster of paris mountains and valleys and level off three-dimensional plateaus. Understanding the terrain, they paint in the political divisions in colors, adding a sort of fourth dimension to their knowledge.

How much subject matter of a child's education may be made concrete in visual and manual terms is made clear. Children are shown regarding and handling boxes of shells, cross sections of woods, mounted birds, an Audubon chart and mounted animals and butterflies—the original equipment of the museum which is still in use.

Exhibits now extend beyond the field of the natural sciences into the social sciences. Children pore over models of native villages, costumed dolls of the nations and models of such industrial inventions as the cotton gin. The film shows them looking at dioramas—miniature stage settings complete with tiny figures of historical characters, each dramatizing an episode important in affecting the course of world events. That the child's experience must be enriched by the beauty of such exhibits, as well as by their educational value, is apparent.

Exhibits are seen to be arranged all at the child's own eye level. Library tables and chairs are child size. It is evident that the museum is the children's own, and they seem to enjoy it.

The museum appears as a place of safety for play and social contacts, with children attending *because they wish to.* A short dramatic sequence shows a scene in which a boy leaving school refuses to match cards with a group in the street, preferring instead to go to the museum.

A sign states the museum's only rule: "Clean hands!" Children wash their hands without question, then turn to activities which absorb them so completely that other rules are unnecessary. Their interest and joy in their work shows clearly in each scene. Yet they are acquiring more than happiness: A certain sense of social responsibility is manifest in their behavior. "Problem behavior" is conspicuously absent. Cooperativeness replaces the tantrum.

Clubs are seen in operation, and these are democratic. The only hint of aristocracy is that of knowledge, as some of the clubs have test requirements for membership. Since there are ten of these clubs, each an integral part of museum work, and because of the limitation of time, it was impossible to include the work of all of them in the film. Perhaps it might be suggestive to set forth here some statement of the work of each, in demonstrating the more fully what the work of a children's museum may include.

First, there is the younger children's Bee Club, studying the life of the honey bee. Most of the lectures are given by children. They are illustrated by reference to drawings, to large dissectible models of bees, to lantern slides, motion pictures and observations of bee hives. A different aspect of the life history of the bee is studied at each meeting: the queen, the drones, the workers, the work that goes on in the hive, the manufacture of wax, the honeycomb and many others. Although the subject is limited, it introduces the child *(Continued on page 743)*

Mysterious Epidemics in History: VI

A milk-borne scarlet fever outbreak in 1885 is described **By CLAUDE LILLINGSTON**

IN EVERY successful story there is a central figure or hero. And the man who made a name for himself in the history of public health and preventive medicine in the milk-borne outbreak of scarlet fever near London in 1885 was Dr. W. H. Power whose unraveling of the problems with which he was faced showed remarkable perspicacity. The main lesson he learned as he sought to discover the origin of a serious outbreak of scarlet fever was that an obscure infection of the udders of cows may be the cause of typical scarlet fever in human beings.

The story begins in what was considered a model farm, as judged by the standards of those days. The farmer prided himself on all the precautions he had taken to avoid mishaps. The local medical officer of health had been invited to supervise the sanitary arrangements of the farm, and its water supply was taken from a respectable water company. The drainage was in good order; the houses were clean and well ventilated, and hot water or steam was employed in the washing of the farm's utensils. All the farm hands and their families were under special medical supervision to prevent any infectious disease being conveyed by them to the farm's customers. Cows suspected of any serious sickness were isolated in a separate shed, and there was a quarantine shed provided for the newcomers.

This quarantine system was the more necessary, as the farmer specialized in milk production to the exclusion of cattle breeding. His cows, numbering nearly 100, were stall-fed, and when they became nonproductive, they were replaced by other, newly calved cows imported from other farms. This meant a fairly active turnover among the farm's cows, and there was always a risk of some cattle ailment such as foot and mouth disease being imported into the farm by a newly bought cow. Hence, the quarantine was designed to prevent trouble for the farmer himself as well as for his customers. As he surveyed his property in November 1885 and pondered serenely over all the precautions he had taken to avoid disaster, he may well have experienced a gratifying sense of well earned security.

On Dec. 18, 1885, a sudden outbreak of scarlet fever was noted by the public health authorties. Early in this outbreak, it was also noticed that most, if not all, the patients had obtained their milk supply from the same milk retailer. Following up this clue, the investigators learned that the suspected retailer was supplied with

milk by two farms. As the inquiry proceeded, it was found that not one of the consumers of the milk from one of these two farms had developed scarlet fever. This discovery narrowed the search down to the other farm, which happened to be that seeming model of blameless perfection already described.

A visit of inspection to this farm by public health experts proved at first singularly negative. No case of sickness, let alone scarlet fever, could be discovered among its workers or their families. The water supply was so impeccable, the drainage was so efficient, the handling and cleaning of the utensils showed such scrupulous attention to cleanliness that it is easy to picture the mystification of the medical authorities as they passed from one building to another seeking trouble and finding none. The farmer, one can imagine, was as skeptical with regard to his farm being to blame as he was proud of his management of it.

A less pertinacious investigator than Dr. Power would have been thrown off the scent as his inquiries convinced him that the sanitary conduct of this farm was well in advance of the times. "But," he probably repeated to himself, "I must never lose sight of the all-important fact that the one element in this problem common to practically all the patients is the consumption of milk from this farm and no other." At the back of his mind was the memory of a remarkably similar outbreak of scarlet fever which he had investigated only three years earlier. Likewise, on this occasion, the clues had converged on a single dairy, one of whose carriers had recently suffered from a sore throat. Three of his children had subsequently developed scarlet fever. There had been a hue and cry for a scapegoat, and this poor man had suffered the penalty of losing his job. Ultimately, Dr. Power had come to the conclusion that this worker's illness had been the effect and not the cause of the outbreak for the simple reason that some of the infections were traced directly back to a certain farm without any of the clues passing through the dairy. On this occasion Dr. Power had been suspicious of the cows themselves as the source of the infection, but so many red herrings had literally been dragged over the trail, in the form of possible human sources of infection, that he had not succeeded in securing to his own satisfaction a definite conviction against one offending cow.

Remembering all this and refusing to let his attention be diverted from the model farm, Dr. Power argued in the words of his chronicler, Dr. H. H. Scott, that, however careful the farmer, however clean his farm, however sanitary its buildings, however well the workers and their families, however thoroughly sterilized the utensils, the milk might yet have become infected at the very source, if one or more of the cows were diseased. As the outbreak of scarlet fever was sudden, he suspected that the solution to the problem might be found in some sudden change in the food or housing of the cows. So Dr. Power proceeded to examine their fodder. Much of it proved to be farm produce which had been so carefully handled that there had been no chance of its deterioration between the source of production and the cows. Besides, there had been no change in the fodder just before the outbreak. So the fodder proved a blind-alley clue, hardly worth mentioning, were it not neces-

sary, in fairness both to Dr. Power and the reader, to give this as a sample of the many clues he had to follow up before feeling justified in dropping them.

Another clue proved much more profitable. It was found in the quarantine shed. Dr. Power learned that the newly bought cows had remained in the quarantine shed in November for about ten days, while those received in December had been quarantined for a week. Towards the end of November, the quarantined cows had been distributed among the cows forming the bulk of the herd, and their places in quarantine had been taken by the cows reaching the farm on December 4. Had there been, Dr. Power asked himself, anything wrong with the cows admitted to the quarantine shed on November 15 and December 4? And if so, might not their milk have been responsible for the outbreak?

The examination of these cows revealed vesicles and ulcers on their teats and udders. There were scars on the teats and udders of the cows which had passed through quarantine in November, the scarring being suggestive of old ulcers which had healed. Two of the cows admitted to quarantine on December 4 were not only diseased themselves but appeared to have conveyed the infection of the teats and udders to previously healthy cows. Evidently the farm hands had conveyed it from one cow to another in the process of milking.

These discoveries led to the careful inspection of every cow in the farm. All whose teats or udders were found to be infected were isolated, and no cowman in attendance on them was allowed to tend or milk the still healthy cows. The discharge from the ulcers on the diseased cows was now bacteriologically examined. It was found that the inoculation of a little of this discharge into healthy calves provoked in three days a tender local swelling which subsequently behaved in a manner reminiscent of the condition found on the teats and udders of the diseased cows. It was thus evident that this disease was communicable from cow to cow. The bacteriologic examination further revealed streptococci which, when injected into experimental animals, gave rise to an infection closely resembling scarlet fever in man.

When samples of milk were taken from the udders of infected cows by aspiration through a hollow needle, no germs could be found in the samples. It was evident, therefore, that, in the process of milking, the hands of the milker had introduced infected particles from the ulcers on the teats into the milk. Now milk is a medium in which certain germs multiply readily when its temperature meets their requirements. It is easy enough to follow the careers of these streptococci as they traveled from the ulcers on the cows' teats and udders to the mouths of the consumers. The milk would contain a high concentration of streptococci in the pail into which an infected udder was milked. When this lot of milk was mixed with that from other pails, the poison would be diluted. But the dilution effected by the mixing of infected with comparatively pure milk might well be more than neutralized, if the mixed milk were kept at a temperature suitable for the reproduction of the offending streptococci in it. They might say, like the proprietor of a fair, "What I lose on the swings, I gain on the round-abouts."

This story is not complete without reference to the final incident as instructive as it was tragicomic. The milk supply of the farm in question having come under suspicion early in the outbreak, the local medical officer of health asked the proprietor of a dairy to return all the milk which had just been delivered from the model farm. It amounted to sixty-three barn gallons, no small loss for any one. His valuable produce thrown back on his hands, the farmer must have been sorely tempted to seek some other customer for it. The temptation must have been the greater for his conviction that the milk was perfectly sound. For had he not taken every precation to make it so?

But a sense of fair play prevailed. The farm bailiff was given orders not to allow the consumption of the rejected milk by human beings. Some of it was emptied into a pit in one of the farmer's fields, and some was fed to pigs, whose appreciation thereof is not recorded. But though the farmer was honest and his bailiff was obedient, certain of the cowmen had their own views about what must have seemed to them a senseless waste of good food. So, surreptitiously and unbeknown to the farmer and his bailiff, these cowmen made a dangerous gift of some of the milk to those of their neighbors who believed that it was possible to get something for nothing in this material world.

Within a week of this reckless gesture of generosity, case after case of scarlet fever broke out in the neighborhood of the farm. An investigation showed that only those families which had been recipients of the milk in question had developed scarlet fever in their midst. And so, unwittingly, the vicariously altruistic cowmen had carried out on a large scale an experiment whose results left little doubt as to the responsibility of the milk itself for the mysterious outbreak of scarlet fever near London in 1885.

[NOTE.—Dr. Lillingston will conclude this series of articles with part seven: "The Hamburg Cholera Epidemic in 1892."]

HEALTHGRAMS

FROM ARTICLES IN THIS ISSUE

¶Glasses are worn mainly for four purposes: to see better, to relieve eyestrain, to protect the eyes and for cosmetic or psychologic reasons. *See page 682*

¶There are more than 29,000 persons who are living proof that cancer can be cured. *See page 694*

¶Allergy may be described as a condition in which one is sensitive to certain specific substances which are perfectly innocuous to the average individual. *See page 704*

¶Good posture, then—with head up, chin in, abdomen flat—means increased efficiency, better health and less fatigue. *See page 712*

¶As the individual life progresses and the span of future possibilities becomes lessened, moderation seems to be the best rule of living. *See page 751*

¶Full of mystery and ignorance, the field of diet has been propagandized and faked to such an extent that a gullible public seems more ready to follow food fads than sound common sense in the choice of what they are to eat. *See page 716*

¶In camp a balanced diet in terms of the functions of foods is a necessity, as well as a diet balanced in terms of caloric content. *See page 719*

¶The product of a children's museum is a socially valuable citizen, well adjusted to face the larger world which, as a child, he has explored in miniature. *See page 729*

¶Our chief need in this matter of keeping cool in sweltering summer is common sense. *See page 736*

¶The wise swimmer knows not only what he can do in water but more important what he cannot do. *See page 697*

SALLY: Perhaps you've heard about Post's 40% Bran Flakes, Dot! The most marvelous-tasting breakfast cereal you ever put in your mouth!

DOT: Goodness—it *must* be delicious for you to be so enthusiastic about it, Sally!

SALLY: Yes, and Post's Bran Flakes are *much more* than a wonderfully fine-flavored cereal—They give you two important *extra benefits* . . .

First, Post's Bran Flakes provide just enough bran, a *natural* regulator, that helps protect you against sluggishness. People whose systems are irregular, due to lack of bulk in the diet, find Post's Bran Flakes, eaten daily, a wonderful help.

Second, Post's Bran Flakes are a good cereal source of phosphorus, iron, Vitamin B_1 to help maintain appetite . . . and today, Post's Bran Flakes come to you at a NEW LOW PRICE!

SIX MONTHS LATER . . .

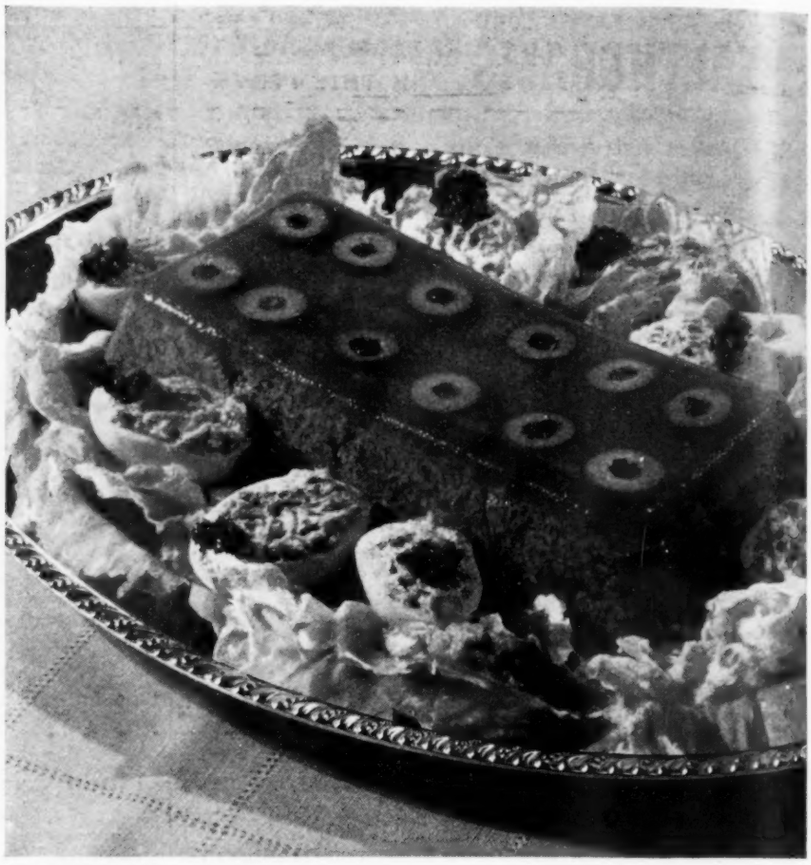
DOT: MMM—Don't Post's Bran Flakes have a simply heavenly nut-like flavor! I've been eating them every single morning for the past six months, Sally—and I've been feeling perfectly grand!

SALLY: And you're a different girl, too! Isn't it wonderful to find a cereal that tastes so delicious and gives those *extra benefits,* too!

IMPORTANT: Post's Bran Flakes, due to their bulk, are a regulative cereal. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes, eaten regularly—as a cereal or in muffins. For cases not corrected in this simple manner, a physician should be consulted. Post's Bran Flakes are a Post Cereal—made by General Foods.

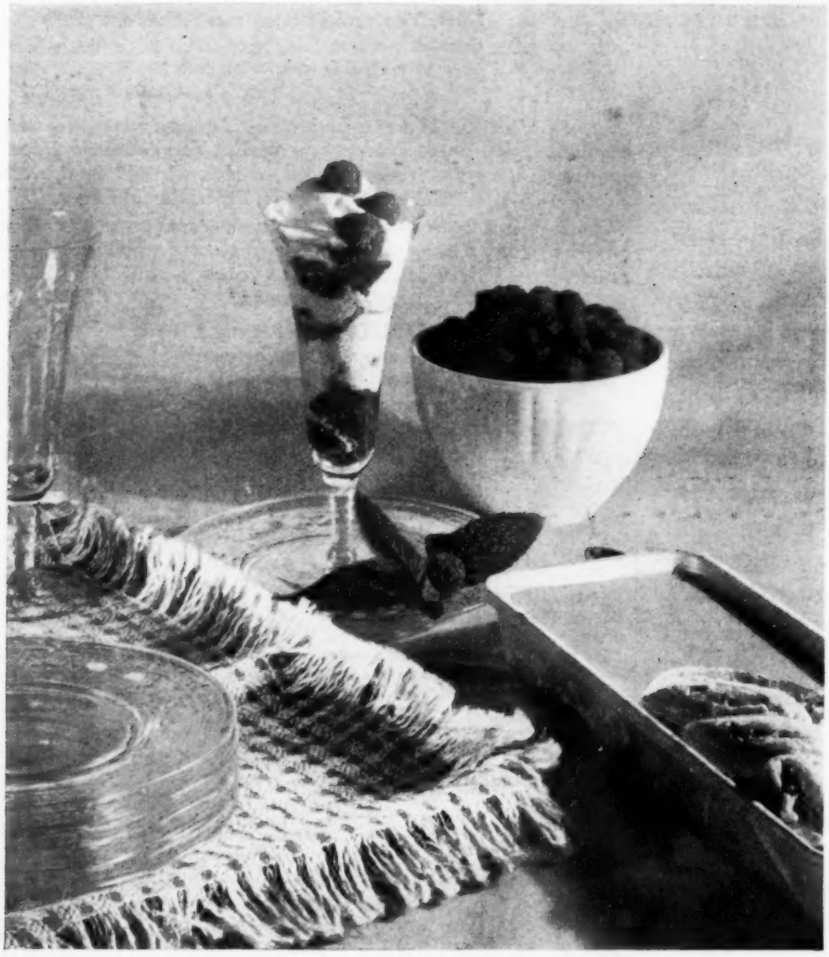
SUMMER FARE

By HARRIET MORGAN FYLER



JELLIED VEAL

For making this attractive dish, the following ingredients are needed: veal shoulder, chopped onion, salt and whole pepper to make meat broth; granulated gelatin; cold water; lemon juice; Worcestershire sauce, and stuffed olives. Directions for making are on page 738.



LAZY appetites make the hard job of meal planning more difficult in a season when any job seems much too hard. Tastes are finicky, and families are hard to please when the thermometer hits the upper register.

The secret of the lazy hot weather appetite is fatigue. And back of this fatigue lies a reason with its roots in nutrition. Two million glands operate at full tilt in summer weather to keep the body temperature down to normal by a natural cooling system of perspiration and evaporation. In the course of this cooling much water is lost. With the water go some of the important elements of the blood. Unless special reinforcements are rushed in to take their place, the blood suffers a sort of starvation, hence fatigue and loss of appetite.

Mineral salts are the main elements food must give back to the blood in hot weather. Chief of

RASPBERRY PARFAIT

This delicious dessert calls for raspberries, sugar, lemon juice, egg whites, salt and whipped cream. For specific directions, turn to page 739.

*Peas at left kept in typical modern refrigerator; peas at right kept in ultra-modern Frigidaire "Cold-Wall."

New Frigidaire "Cold-Wall" Saves Foods from Drying Out!

ONLY ONE OF ITS KIND IN THE WORLD!

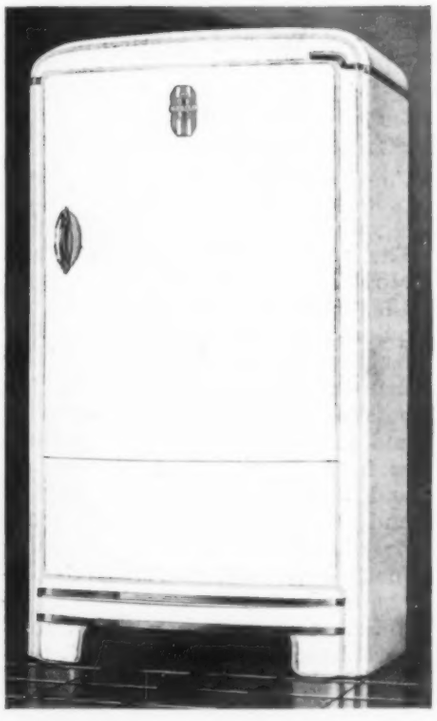
● This amazing new "Cold-Wall" Frigidaire . . . first of its kind ever built . . . saves foods from drying out . . . without covers of any kind! And just as startling, it preserves the flavor, color . . . the rich nutritional values of food for days on end! Because with this sensational new refrigeration principle, foods are not dried out by moisture-robbing air currents.

No messy wrapping of food is necessary! Left-over meats, cooked and fresh vegetables keep healthfully delicious for days!

No other refrigerator can give you so many important advantages. Because only Frigidaire has the "Cold-Wall." Yet, with all its many advantages, the "Cold-Wall" Frigidaire costs no more than ordinary "first-line" refrigerators. See it at your Frigidaire dealer's now.

FRIGIDAIRE DIVISION, General Motors Sales Corporation, Dayton, O.—Toronto, Canada.

Frigidaire invites you to visit the General Motors Exhibits at the New York World's Fair and the Golden Gate International Exposition, San Francisco.



AMAZING NEW "COLD-WALL" PRINCIPLE

Preserves Foods' Natural Juices, Flavor, Color, Nutrition Days Longer!

See this X-RAY PROOF!

YOU DON'T HAVE TO COVER FOODS

COLD-WALL COOLING provides an abundance of vital, protecting cold THROUGH THE WALLS and AROUND THE FOOD. First time ever done in home refrigerators! See the "X-Ray" demonstration of COLD-WALL. SEE PROOF that it saves foods from drying out—WHY you don't have to cover foods!

CUTS CURRENT COST TO THE BONE...

Simplest Refrigerating Mechanism Ever Built—and when parts aren't there, they just can't use current or wear. Completely sealed. 5-Year Protection Plan, backed by General Motors.

FRIGIDAIRE WITH THE METER-MISER

these is common table salt. One of the quickest and most effective pick-ups for hot weather doldrums is a little salt in the glass of drinking water. Many factories provide salt dispensers near the drinking fountains for their employees. Extra salt on food where you like it is also a good practice in hot weather. Other minerals necessary to make up for cooling-system losses may be taken by way of fresh green vegetables and fruits.

The extra water required may be taken by way of beverages. Cold milk, fruit juices, iced tea and coffee are excellent summer beverages; they are refreshing and do not add too many calories. Although it is probably not a good idea to overindulge in iced drinks, the judicious enjoyment of long cooling drafts tinkling with ice cubes is not harmful. In compounding summer beverages, it is well to remember that iced tea is clearest when poured hot over ice. A black tea may become cloudy if cooled before use, and for this reason recipes for fruit punches often specify green tea. A sugar syrup is better adapted than plain sugar for sweetening fruit punches and lemonade. A cupful of sugar to a cupful of water, boiled 10 minutes, makes a fairly sweet syrup.

When planning summer menus, it might be a good thing to remember the purposes served by different foods, which are:

1. To produce energy.
2. To supply fuel.
3. To replace and build bodily tissue.

The requirements for energy and repair in adults are not greatly affected by the seasons, but the requirements for maintaining body temperature are greater in winter than in summer. That is why it is possible to cut down on the quantity and, in some instances, on the kinds of food when the mercury climbs and stays in the upper eighties and the weather report reads "continued warm." Heat-producing foods especially, such as fats, including butter, rich gravies, mayonnaise, cream and pastries, and carbohydrates, such as bread, rice, potatoes, macaroni and sugar, may be decreased. A meal including large quantities of these items will supply more heat than a meal consisting largely of leafy green vegetables, fruits, certain types of cheese, milk, lean meat and eggs.

"To cut down," however, does not mean "to cut out." It is important to include some food of all classes, at all seasons. It is not advisable to give up bread and potatoes and at the same time to consume dishes rich in butter or salad dressing, because fat is properly assimilated in the body only when starches or sugars, or both, are also present. Neither is it advisable to omit meat. The normal person needs his quota of protein and carbohydrate, as well as minerals and vitamins. Our chief need in this matter of eating to keep cool in sweltering summer is common sense.

Nature has given us a lucky break for summer nutrition because the most suitable foods come in largest quantities and are cheapest during the months we need them most. Of the vegetables, lettuce and summer squash reach their peak supplies in July, while string beans, peas, beets, cucumbers, corn, cabbage and tomatoes climb steeply to their August point of high supply. In fruits, July is the berry month and melon month. The biggest supplies of blackberries, raspberries, blueberries, gooseberries and currants together with watermelon, honeydew melons, cantaloups and honeyballs are available. Apricots and cherries are also plentiful during these months.

All fruits and vegetables make contributions of minerals and vitamins as well as calories and "roughage." Some of the special known contributions of the fruits and vegetables that come to market in top quantities in July are listed here.

Raspberries rate as an excellent source of vitamin C. Along with vitamin C they have a good supply of iron. Currants and gooseberries have been rated also for their excellent supply of vitamin C. Blackberries and blueberries rank only fair in vitamin C but contain as much iron as raspberries and also some vitamin A. Watermelons rate only fair for each of vitamins A, B_1, C and G and do not rank high in minerals. But considering the size of the usual watermelon serving as compared with other fruits, the watermelon may be regarded as an excellent source of these vitamins. Cantaloups, honeydews and honeyballs have much of the same type of food value. They are fair sources of vitamin B_1 and G, good sources of vitamin A and excellent sources of vitamin C. Apricots rank as excellent for vitamin A and good for vitamin C.

Fresh fruit goes well with every meal from breakfast to dinner; it is rich in vitamins and mineral salts; serve it on prepared cereals, on ice cream, in fruit cups and salads, with cream or with cheese, in gelatins and custards or in any other way. Fruit is good food for summer. Fruit pies and shortcakes contain more calories and therefore are more "heat-producing," but when a cool day comes, go ahead and eat pie. Fruit juices are a much better "pick-up" to drive away midmorning or midafternoon fatigue than the more calorific beverages.

The food value of summer squash varies with the variety. The yellow kind is excellent for vitamin A. Lettuce is a good source of vitamin G and a fair source of vitamin B_1; if it is very green it also contains vitamin A.

Green vegetable salads and freshly cooked vegetable plates with cold cuts of meat and thin slices of cheese are always eaten with pleasure in the summer time. One cooked vegetable plate that tickles the nostril, the palate and the eye consists of a hollowed head of cabbage filled with chopped cooked corned beef (or canned corned beef finely chopped) steamed a sufficient time for the cabbage to be tender but not long enough to lose its pristine beauty, surrounded with cooked beans and sliced carrots.

Ice cream and fruit sherbets top the list of summer dessert suggestions.

Here follow some recipes to enhance summer meals.

Jellied Veal

- 1½ pounds veal shoulder
- 1 onion, chopped finely
- Celery tops or sprigs of parsley
- 1 tablespoonful whole pepper
- 2 teaspoonfuls salt
- 2 cupfuls hot meat broth
- 1 tablespoonful granulated gelatin
- ¼ cupful cold water
- 1 tablespoonful lemon juice
- 1 teaspoonful Worcestershire sauce
- 4 stuffed olives

Cover veal with boiling water; add onion, celery or parsley and whole pepper. Simmer gently until

done, about 2 hours, adding salt during last half hour of cooking. Take meat out of soup stock. Remove bones, and chill meat. Strain broth through a cloth, chill; remove fat and cook down to 2 cupfuls. Soften gelatin in cold water, and dissolve in hot broth; cool and add Worcestershire sauce and lemon juice. Chill until partially set. Grease a loaf tin lightly with salad oil; add a thin layer of gelatin; arrange sliced olives in gelatin, and chill until set. Add chopped meat mixed with remaining gelatin; chill until set. Unmold and garnish with lettuce, tomatoes and hard-cooked egg. This is an extra special dish when served with the following dressing:

½ cupful mayonnaise or salad dressing
¼ cupful prepared horseradish sauce
2 tablespoonfuls lemon juice
½ cupful whipping cream

Combine mayonnaise, or salad dressing, horseradish sauce and lemon juice. Whip the cream until stiff and fold into mixture.

Raspberry Parfait

2 pints raspberries
1 cupful sugar
2 teaspoonfuls lemon juice
2 egg whites
⅛ teaspoonful salt
1 cupful heavy cream, whipped

Wash and force berries through a sieve. Add ¾ cupful sugar and lemon juice. Beat salted egg whites until stiff but not dry; add remaining sugar one tablespoonful at a time, beating thoroughly after each addition. Fold meringue and cream into raspberry juice. Mix thoroughly. Put in freezing trays, and freeze 2 to 3 hours.

Refrigerator Cake

1 package butterscotch pudding powder
1 cupful strong coffee
1 cupful evaporated milk
Plain cake

Add milk and coffee gradually to pudding. Cook until thickened, stirring constantly. Remove from heat, and let stand until cool. Line four custard cups or one small mixing bowl with narrow strips of cake. Pour cold pudding into molds; cover with thin piece of cake. Keep in refrigerator overnight. Unmold, serve with cream if desired.

"SO THE DOC SAID, 'NO MORE COFFEE'... AND YOU PULLS OUT THEM TRIMMIN' SHEARS AND TRIES TO CUT HIS EARS OFF!"
"YESSIR! I'D HAVE DONE IT, TOO...ONLY HE HOLLERS, 'DRINK POSTUM INSTEAD!' ... SO I LET HIM UP!"

WHAT WOULD YOU DO if your doctor said, "Absolutely *no* coffee"?

Would you set up a howl?

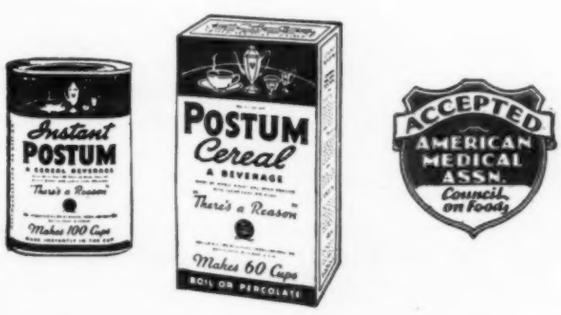
Or would you promise to take his advice, knowing full well that you'd sneak a cup of coffee now and then?

If, however, he added, "Drink Postum instead," your dilemma would be ended. For Postum is a warm, satisfying, cheering drink, with none of the disadvantages of coffee. And Postum is delicious either hot or iced.

Postum is a perfect mealtime drink, *without caffein* or harmful stimulants of any kind. Postum is simply whole wheat and bran, roasted and slightly sweetened.

Quickly prepared—Economical, too!

Postum comes in two forms: Postum Cereal, the kind you boil or percolate, and Instant Postum, made *instantly* in the cup. It is delicious and easy to make either way—and costs only about ½¢ a cup. Postum is a product of General Foods.



ASK YOUR DOCTOR ABOUT POSTUM

● The whole family will like the delicious tree ripened flavor and uniform quality of Dr. Phillips Orange and Grapefruit Juice and Grapefruit hearts. Scientifically canned fresh from the grove with vitamins A, B and C preserved to a high degree.

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HAVE YOUR DEALER SHOW YOU THE NAME
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Church's Pure Natural Grape Juice ●
made from properly ripened grapes. Contains no added sugar, water or other substance whatsoever.
Free from the excess acid of unripened fruit.
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THIS TOMATO JUICE IS NEVER THIN OR WATERY
High retention of nutritional values because made by patented process. The Sun-Rayed Co., Frankfort, Indiana.
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BABY FOODS

THE DEFEAT OF THE CATTLE TICK

(Continued from page 709)

If the reader cares to know what the Bible actually says about that ox, he may read verses 33 and 34 of the twenty-first chapter of Exodus.

In some cases the opposition went so far as to blow up the dipping vats with dynamite and to shoot the inspectors engaged in the work. It became necessary to protect the inspectors by armed guards. Even so, their lives were still in danger. In 1922, one inspector in Arkansas was killed and another seriously wounded by men who fired from ambush. The most notorious case of outlawry, however, occurred that year in Georgia. Max Lochridge, an inspector, was shot and killed, and his assistant, Roy S. Ritchie, was seriously wounded, when fired on by Mann Carter and his son, Will Carter. The trial was long drawn out; but in the end, the father and son were sentenced to serve seven years each in the penitentiary. In addition, the father was sentenced to pay a fine of $10,000 and the son a fine of $1,000. These were light sentences for murder; but the long drawn out trials and the heavy fines, in addition to the prison sentences, ruined the Carters financially. The results of this trial dampened the ardor of other ruffians on murder bent. The dynamiting of dipping vats continued for a while; but finally law and order prevailed, and the dipping of cattle progressed more rapidly.

Thanks to the law makers of our southern states, the scientists had the law on their side in practically every case, and these men persevered, carrying on such a war against the cattle tick that today the ticks are eliminated in more than 96 per cent of the territory over which they once roamed. Only four small areas remain. Two of these are in Florida and two in Texas.

In the tick area of Florida, there are many tick infested deer. In the nature of things they cannot be dipped. It was decided that the deer are to be shot. After shooting the deer the cattle are to be dipped, until the last tick has ticked its last. Then it is proposed to allow the area to be again stocked with deer from uninfected regions.

The final campaign is on. The Armageddon of the cattle tick is just ahead. The tick is tough and a hard fighter, but it is losing ground mile after mile. Doubtless it will make its last stand in the Everglades of Florida or on the banks of the Rio Grande in Texas. Not one tick will survive. From that time on, our beautiful Southland will know the fever tick no more. Therefore, we close as we began: *"The cattle fever tick is doomed."*

THE MECHANICS OF HEALTH

(Continued from page 714)

of poor posture. Abnormal pressure and congestion are produced by the crowding downward of the falling abdominal organs. Abnormalities of menstruation may result, and symptoms from malpositions of the uterus following childbirth may be initiated or made more severe by the excessive pressure from above.

Poor body mechanics may indirectly affect the working of the mind. Studies by the U. S. Department of Labor in 1926 demonstrated that improvement occurred in the school work of children following correction of faulty mechanics.

Good posture, then—head up, chin in, abdomen flat—means increased efficiency, better health and less fatigue. Poor posture means reduced efficiency, lowered vitality and predisposition to disease.

Faulty mechanics can be corrected. This is best done under the supervision of a physician. Usually exercises are sufficient, but temporary brace support is sometimes needed.

If you have faulty body posture, consult your doctor. Learn how to use your body properly, so that it may function fully and completely in harmony.

GELATIN

Summer menu-makers request a food that is cool to prepare, which in addition is appealing to the eye and appetizing to the palate

EVERY housewife who has cooked a soup bone has made gelatin. It is a substance from the bone which causes soups to jell after standing in the refrigerator overnight.

Manufacturers prepare gelatin by methods which involve a considerable degree of scientific control as compared with the kitchen cooking method of preparing gelatins. Commercial gelatin is obtained from certain animal tissues: tendons, cartilage, bone and skin by heating with water. A favorite method is to steep the gelatin-yielding materials for several weeks in a solution of lime water; these materials are then washed and heated with water. The water solution containing gelatin is filtered, the water evaporated, and the dried product is prepared in various forms, including the granulated, which is familiar to all cooks.

The viscosity, or thickness, and jelly strength are two important qualities of gelatin. These qualities depend largely on the source of the gelatin and the method of manufacture. If the gelatin has a low viscosity and jellying strength, it does not make a stiff jell, and liquid oozes out of it; or as housewives commonly say, the jell "weeps." To assure a gelatin of uniform jellying strength, different lots of gelatin are first tested and then blended so as to produce any one of the grades available. Grades of gelatin differ in accordance with the jelly strength as determined by the Bloom gelometer, the official method of the Edible Gelatin Manufacturers Research Society of America. Jelly strength is classified by the trade as Bloom grams, numerically expressed as 75, 100, 125, 150, 175, 200, 225 and 250.

For the wholesale trade dried granulated gelatin is classified into various grades by laboratory tests on the basis of jelly strength and special properties designed to meet the requirements of the manufacturer. For example, gelatin designed for the production of jellied meats differs from the gelatin designed for the fabrication of marshmallows, and these differ from the gelatin used in the manufacture of ice cream. The gelatins so classified are available only to wholesale trade.

Granulated gelatin consists of 88 per cent protein, 10 per cent water and 1.2 per cent ash. One ounce (3½ tablespoonfuls) furnishes approximately 99 calories. Since 1 tablespoonful of dried gelatin is sufficient to jell 1 cupful of liquid, it is obvious that gelatin as

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FOR EVERY MENU

Texsun, America's finest, is the pure, natural juice of the choicest Texas grapefruit, famed throughout the world. Its low acidity, high natural sugar content, and wholesome flavor are acclaimed by millions. Here's a delicious grapefruit juice that's always welcome whether served as an eye-opener at dawn, a nitecap at bedtime, or a refreshing pickup between meals.

RECIPES YOU'LL TREASURE!

Send for 303 THRILLING CITRUS FRUIT RECIPES. There's nothing like it in America today! All classifications from appetizers to desserts and festive suggestions are covered; likewise all citrus fruits, both fresh and canned. To obtain your free copy of this unique, handsome volume, merely send us 3 Texsun Grapefruit Juice can labels (any size) and 25c to defray handling and postage. If your grocer cannot supply Texsun, send his name and address together with this advertisement and 25c.

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GRAPEFRUIT JUICE

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ordinarily consumed is not a fattening food.

The flavored gelatin dessert powders are to be clearly differentiated from the clear sparkling gelatin. The flavored dessert powders contain only about 10 per cent gelatin, and the remainder is sugar, citric acid, synthetic and natural fruit flavoring and coloring. These products were described in detail in the May issue of HYGEIA.

The housewife who prefers a gelatin dessert without sugar and with special flavoring can use pure gelatin to good advantage. Gelatin is particularly useful in the preparation of reducing or diabetic diets because of the possibility of omitting sugar from the final product.

Gelatin dissolves better in hot water after being first soaked in cold water. It is best to add the sugar and flavorings after the gelatin is dissolved completely. If fruits or vegetables are to be added, they should be added to the gelatin as dry as possible and just after the gelatin has begun to congeal. Fruits and vegetables that are slightly wet, of course, will decrease the stiffness of the jell.

Fresh pineapple and gelatin should not be mixed, because an enzyme in the pineapple liquefies the gelatin. Heating the fresh pineapple in boiling water will destroy the enzyme.

Beating the gelatin solution after it has become thick and syrupy but not stiff enough to cause the edges to break up will result in a foamy mixture and will double its volume. Whipped cream or egg white may be added to this mixture.

The stiffness of the jell prepared with gelatin usually depends not only on the concentration of the gelatin but also on the temperature at which it is prepared and the length of time it is allowed to jell. An easy guide is to use ½ tablespoonful of gelatin (in granulated form) to each cupful of liquid. A gelatin mixture maintained at a temperature of 95 F. will not jell at all. Best results are secured when the temperature is below 60 F. The lower the temperature the more rapidly the solution jells. Once a jell is formed, it can be heated to a temperature several degrees above that at which it jelled without liquefying. Even after the jell has been liquefied, it can be rejelled without any harm to its original quality.

All in all, gelatin is one of the most useful, the most versatile and the most interesting foods at the housewife's command. Gelatin may be incorporated in nutritious soups and bouillons, thus making them thicker and richer. Gelatin bouillons may be served hot or cold, and during summer months they have a special appetite appeal. Vegetables, fruits and cold meats and cooked seafoods enclosed in a coat of clear shimmering gelatin give a new slant to the most prosaic meals.

The Council on Foods of the American Medical Association considers gelatin a useful food for general dietary purposes and also for certain special nutritional requirements. It is well tolerated and easily digested, consequently has a wide application in the diet of healthy persons and frequently for the sick or convalescent.

ACCEPTED GELATINS

The following brands of gelatin stand accepted by the Council on Foods of the American Medical Association, July 1, 1939, and are distributed by the manufacturers who are privileged to use the acceptance seal:

Atlantic Gelatin, Granulated
Atlantic Gelatin, Flaked
Caswell's Gelatin
Grayslake Gelatin
Jell-Well Gelatin
Minute Gelatin
Quaker Gelatin
U-Cop-Co Gelatin, Granulated
U-Cop-Co Gelatin, Flaked
Wilson's Gelatin, Granulated
Wilson's Gelatin, Flaked

The following firms sell accepted brands of gelatin to manufacturers of food products that contain gelatin:

Atlantic Gelatin Company, Inc., Woburn, Mass.
Thomas W. Dunn Company, New York City
Meyer-Blanke Company, St. Louis
The American Agricultural Chemical Company, Detroit
Swift and Company, Chicago
Grayslake Gelatin Company, Grayslake, Ill.

A MUSEUM FOR CHILDREN (Continued from page 731)

to scientific study of an organism and to social study of a community.

The Microscope Club deals with the making of slides and equipment, as well as with a wide variety of microscopic subjects. The Photography Club also teaches children how to make their own equipment, including enlargers. Members study the use of the camera, methods of copying, of intensification and reduction. Monthly exhibits are held at the museum.

The Pick and Hammer Club is for mineralogy students who are serious enough to work toward passing an extremely difficult field determination test. It is one of the most intellectual clubs at the museum, permitting no visitors at its meetings except those who can contribute to the discussion. Discussions touch on such advanced topics as radioactivity, crystalography and microchemical analysis.

There are two Science Clubs, junior and senior. Their program is quite general and at one meeting is apt to include such varied topics as the Bunsen burner, the photo-electric cell and a study of the theories of light. The children give all the lectures. Their interest is in the practical application of scientific theories.

In the Stamp Club, children engage in stamp exchange and become aware of the geography, history and art to be found in the stamps themselves and in the study regarding them. They make display arrangements, contribute to stamp magazines and enter the National Junior Stamp Exhibition.

The LDH Guild was recently organized by a group of boys and girls particularly interested in literature, dramatics and history. The name is derived from the first letter of each subject. The Guild is made up of three committees, one devoted to each of these three major subjects. The Literary committee publishes a monthly paper called "The Guild Voice." Children decide on its editorial policies, do all the editing and accept only articles written by children in the museum. The History committee discusses historical topics and current events, holding lectures and debates. The Dramatic committee dramatizes these discussions.

The Craft Club is open to all those interested in using their hands. It includes in its activities the making of scientific equipment and the actual printing of "The Guild Voice." Carpentry is a newly organized craft, fast becoming popular with the girls as well as with the boys.

This wide range of activities has been designed to meet the needs of the various age groups from kindergarten through high school. Since the "teen" age boy or girl has little in common with the preschool child, age limits have been set up for membership in many of the clubs. The Bee Club, for example, has no members over 13 years of age, while the Photography Club will not admit children under 12.

Children are "caught" in "The Child Explores His World" in the actual process of exploring, or learning, and in the process of making social adjustments to others. Adjustment to themselves, or poise, comes naturally along with these other gifts. During the filming of the picture, it was especially noticeable. From long experience with handling children, the Harmon Foundation can state that those photographed in this film were exceptionally well able to conduct themselves in a responsible manner and were exceedingly helpful.

Two adults who had regularly attended the museum in youth were willing to pose for film sequences proving the value of museum work. These were Herbert B. Pearson and Carl Supp, both of Brooklyn.

Mr. Pearson, now in partnership with his father in importation of lumber, feels that his scientific studies in the museum as a child aided him in his approach to business life. He is seen on his own dock supervising the unloading of huge logs of rare woods. His business requires knowledge of his materials and ability to manage people.

Carl Supp, now an accomplished lapidary, began his first work with minerals at the museum. He is shown at work polishing precious stones, which he has cemented to sticks for facility in handling. The equipment he uses, he made himself, a refinement of crude machinery he first developed as a youth in the mineralogy division.

The boys and girls at the museum are all working toward some goal. Too often, without such a center of encouragement, childish curiosity and strong social instincts may lead to mischief and later to crime. Candid shots of small children delving into garbage cans, climbing over railings and tipping over large street waste receptacles are impressive of what children will do when guidance is not given them.

The film emphasizes that a children's museum, which will capture this energy and direct curiosity into useful investigative channels, may be modestly begun. A recent development was one at Jackson Heights, Long Island, N. Y., where under private sponsorship, a museum was established in an old store building. On the main shopping street of the suburb, the structure has been adapted to accommodate the boys and girls who flock there; and at small expense, equipment is furnished for painting, modeling and nature study. Others that have been developed throughout the country are opening the way to providing wholesome recreational centers for children, where young minds are nourished on stimulating material, and where young personalities are allowed expression.

There are now twenty-two regular children's museums in the country and nine which have been set up as a part of adult museums—making a total of thirty-one in all. Fifteen states now offer children's museum facilities: New York leads with a total of eight; California has four; Massachusetts, three; Connecticut, New Jersey and Ohio each have two; and Colorado, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Oklahoma and Rhode Island each, one museum.

The product of a children's museum is a socially valuable citizen, well adjusted to face the larger world, which as a child, he has explored in miniature. If specific training in scientific technics, or in art, debate or in any field of museum endeavor, may happen to prove useful in his later vocational or professional life, this is surplus profit. The main fact is that a reasonable and sane person is produced in this world where reason and sanity are at a premium.

This point has been amply demonstrated in the film, in visual, photographic form. Since the picture is a silent one, occasional titles have been employed to clarify the

larger aspects of what is shown on the screen and to guide the audience in appreciation of the action.

As a sample of modern visual presentation, "The Child Explores His World" is now employed in university teacher training classes devoted to visual methods. A theoretically sound exposition, it is applicable for practical use by organizations wishing to see how motion pictures may help them to set forth interests such as theirs to the public.

The film is already being used by adult museums in campaigns urging the establishment of increased facilities for children. It is available at present for either rental or sale to all communities or groups concerned with the mental health of their children and with the best possible development of those who will be tomorrow's citizens.

The cost of renting the film is $3 per showing or $9 a week. The purchase price on the basis of a lifetime lease of the print is $50. Phonograph records, cued to accompany the film, may be rented for $1.50 per showing. The receiver prepays all transportation charges.

CLEANING UP ON FOOD

(*Continued from page 703*)

and found the "enthusiasm very surprising"; mothers frequently asked for additional copies to pass on to their neighbors. The subcommittee on school health of the Mott Haven District health committee cooperated by sending home 12,000 handbills with the children of the first three grades of public and parochial schools, having decided that the best cooperation in the matter would come from the youngest children.

A letter was sent to all the clergy of the community enclosing a mimeographed copy of the code and the message to buyers, asking to have them posted on the bulletin board and to have the attention of the congregation called to them.

The sub-committee on industrial hygiene cooperated with the health education committee by sending a letter to 567 factories in the community, calling the attention of the employer to the campaign and asking that the message to buyers of food enclosed be posted on the bulletin board.

The local newspapers were helpful with publicity, both solicited and unsolicited. Pictures of the volunteer group were published. In one paper the leading editorial in a Sunday edition wrote of the campaign in highly commendatory terms. On Jan. 19, 1938, the health officer read a paper on the Cleanliness Campaign before the Bronx County Medical Society. About 500 members were present. The window cards were shown, and the handbill with its message to the housewives was distributed to each physician.

How successful was the campaign? To learn what effect the food dealers' pledge cards had, the volunteers made a return call about a month later to get the reactions of the food dealers. Here are given actual reports: One grocer said he gained customers. A baker said he received no comments from customers but that the placard made him more careful himself. A delicatessen owner said it made his help more careful and asked for another card because the original was soiled. A fruit dealer kept his card three weeks but decided it was too hard to live up to always, so he discarded it. One man reported "inspector's visits enough" for his store. Another storekeeper said the signs kept customers from handling his food, and for that he was pleased. Several reports indicated the card stayed in windows permanently, others that some stores left the placard up only two or three weeks, removing it when the window was to be redecorated. Some dealers felt the card was more helpful inside than out, as it then was before both customer and employee at the same time. Several proprietors thought the cards had helped them both in an increase of business and in care on the part of their employees in handling food.

A report of one worker read,

"It was the experience of my committee that once the tradesmen were assured that signing was merely a pledge of honor, they showed no hesitancy in doing so. Personally I have observed my grocer since he signed his pledge, and note a marked improvement in the sanitary conditions in his store. He seems conscious of his fingers when handling cheese, etc. It has also done a great deal of good inasmuch as it has made the housewife more particular about the method in which her tradesman handles her foodstuff and she, in turn, has insisted upon his observing more sanitary methods."

The supervising nurses of the Baby Health Stations were also able to learn some reactions from the public. Mothers commented on the absence of the cards from some store windows, and they watched the clerks more closely to see that they carried out the pledge of cleanliness. Some of the mothers reported that they had refused to buy at stores where clerks were not following the campaign. Children were eager to report to mothers and nurses where they had seen the posters displayed. Mothers were more alert to observe carelessness on their own part regarding mouth and hand cleanliness.

In order to secure an estimate of the campaign from the point of view of the housewife, the school health committee sent a brief questionnaire to the same homes to which the handbills had been sent, asking if improvement in food handling by the shops had been noted. Of the 12,000 questionnaires sent home by the schools, 6,631 were returned. Of these 5,436 or 82 per cent reported improvement; 1,195 or 18 per cent reported no improvement.

These estimates of the value of the community health program are, to be sure, accompanied by uncertainties. But in the absence of more adequate measures and since the means available are all positive in their findings, the campaign was considered successful.

CHILD HEALTH

"We may have wealth, we may have guns and other munitions, but unless we have men, America will not survive," Edward Clay Mitchell, M.D., Memphis, Tenn., declares in a plea for a well organized and practical program for the preservation and improvement of child health as the only insurance for the future of the nation, presented in *The Journal* of the American Medical Association.

QUESTIONS AND Answers

H. Armstrong Roberts

What characteristics should a perfect hand lotion contain?

Soybean Meal

To the Editor:—Is raw soybean meal digestible?

E. J. M., Florida.

Answer.—This question is difficult to answer because it does not indicate just what type of product is referred to or whether it is to be used by man or by animals. Two workers in a study of soybean varieties with reference to their use as food make the following statement:

"Only a few experiments have been reported in which the utilization of soy bean proteins has been determined by feeding human subjects, but there are countless records of the feeding of soy beans and soy bean oil cake or meal to all kinds of farm animals and to small laboratory animals. The experiments with animals have shown that far better use of their proteins is made if the beans are cooked or heated before they are fed."

Thus, the raw soybean is apparently digested by animals but is not as efficiently utilized as the cooked.

Raw soybeans have a bitter taste, which must be removed, usually by heating, before the product can be used as human food. Therefore, commercially prepared soybean meals which have been disembittered are not, strictly speaking, raw. Soybean meal may be used as an ingredient in a variety of foods such as bread, macaroni products, beverage bases, sausages, ice cream and so forth. Most of these products are cooked before they are consumed.

Hand Lotions

To the Editor:—What characteristics should a perfect hand lotion contain? Are any harmful or injurious? Has the consumer any protection when he buys hand lotions? E. N., Ohio.

Answer.—A perfect hand lotion should be as nearly a perfect emulsion as possible. Hand lotions act as lubricating, softening, soothing and protective agents. In general, they are composed of nonirritating oils with or without incorporation of mucilaginous substances.

Hand lotions in general are relatively harmless. Any individual may be hypersensitive to one of the ingredients of a given lotion, especially to the perfume incorporated in it, and in such an instance he must change over to another preparation.

A consumer's protection in the purchase of such an article is knowledge of its source of manufacture and purchase.

Digestion

To the Editor:—Why isn't the digestive system digested by the digestive juices?

M. R., New York.

Answer.—There are a number of factors which enter into the ability of the digestive system to form and secrete powerful digestive enzymes and yet remain undigested itself. Probably the most important factor is that the digestive system is made up of living cells with an active and intact circulating supply of blood. Living cells have great power to resist the action of enzymes and ferments.

One important safeguard lies in the inner lining of the digestive tract, which secretes a protective mucus that forms a surface layer and protects the cells of the walls of the digestive tract from the action of the enzymes in the digestive juices.

Another important mechanism for protection is in the ability of the various digestive juices to neutralize each other as far as their acid or alkaline character is concerned. Some of the digestive enzymes act best at a certain degree of acidity; while others require an alkaline medium for their best activity. The various digestive juices normally provide the proper degree of acidity or alkalinity for the enzymes to act in; thus, the gastric juice from the stomach is acid, and the protein digesting enzyme, pepsin, acts best in an acid medium. The pancreatic juice is alkaline and provides the best conditions for the digestion carried on by the enzymes from the pancreas. These two juices, as well as others, mix and thus change the reactions of the fluids in which are the enzymes. So they protect the cells of the digestive system itself from the digestive activity of the enzymes. This is particularly true as a means of resistance against the pepsin in the gastric juice of the stomach.

Some of the enzymes are not active while they are being formed in the cells of the digestive system but become active only after they

have been secreted into the gastrointestinal tract and have been mixed with other secretions which activate the enzyme there.

These digestive enzymes are secreted in large quantities only after meals, when food is present in the gastrointestinal tract for the enzymes' action. This food helps neutralize the digestive juices and protects the wall of the alimentary canal from the enzymes.

Undulant Fever

To the Editor:—I was confined to the hospital for six weeks last October with undulant fever. I was told that the blood test remains positive for a long time after the patient leaves the hospital, and the only thing to do is rest and keep up a good general resistance.

I was treated with sulfanilamide injections, and still my blood tests positive. Is it possible to get rid of the germ by merely building up a resistance?

F. G., New York.

Answer.—Continued presence of a positive agglutination test for undulant fever is not in itself an unfavorable sign. It indicates that the patient has been exposed to the germs in question, has harbored them and has developed certain defense reactions in the body against them. A fairly large proportion (perhaps 10 per cent or more) of patients actually ill with undulant fever have negative agglutination tests. Recent work seems to indicate that some such negative tests are changed to positive after the administration of sulfanilamide. That is, as sulfanilamide exercises its curative effect and the patient improves, there is also an increase in the defense activity of the patient's body against the germ of undulant fever. It would therefore seem unnecessary to have further treatment solely because the agglutination reaction remains positive. If fever or other symptoms of active infection persist, further energetic treatment would be desirable. This point can be determined only by the patient's physician.

In any case, general hygienic measures such as relative rest and abundant food should be persisted in for some time in order to prevent flare-ups, which do sometimes occur after apparent cure of this troublesome and frequently stubborn disease.

Drugs During Pregnancy

To the Editor:—Can large amounts of quinine—from 150 to 200 grains—taken in the second month of pregnancy injure the child either mentally or physically?

Can hysteria and profoundly melancholy moods during the first three months of pregnancy injure the child either mentally or physically?

J. W. T., Oklahoma.

Answer.—The first question neglects to state how long a period of time elapsed during the administration of the 150 to 200 grains of quinine. This is important, as the concentration of the quinine would make as much difference as the amount taken. The main purport of the question is whether or not the fetus can be injured either mentally or physically by quinine. Quinine is supposed to stimulate or produce contractions of the uterus. There is little evidence that it will cause the contractions prior to term or to labor. But if these contractions were excited it would do the fetus definite harm. There is some evidence that quinine taken in large amounts or over a long period of time may produce some affection of the auditory nerve in the fetus, which might be carried over into its subsequent life. We have no evidence that quinine does any other harm than those mentioned effects.

The unstable nervous systems are probably hereditary in some form and may be transmitted from parents to offspring. However, there is no evidence that there is any direct effect on the fetus itself. If there is any mental or physical defect in the fetus, it would be regarded more as an inherited or environmental condition than one which is acquired by the fetus while in the womb.

Recession of Gums

To the Editor:—In that condition of the gums known as "recession of the gums" is there any way of restoring the gums or keeping this condition from spreading?

M. S., California.

Answer.—One author of a recognized textbook on dental diseases states that there are no less than three distinct clinical types of gum recession: atrophic, abrasive and inflammatory.

Atrophic recession is represented by a shrinkage of the gum, dependent on a more or less coincident wasting away of the crest of the alveolar process [tooth socket]. The gums may be firm, pink and apparently healthy. This condition is not uncommon in later life and is regarded by some as normal physiologic process. The causes of the atrophic changes in the alveolar process are obscure but are believed to be due to disturbances in nutrition. The most that can be accomplished by treatment is to prevent further recession. Because the bone has been absorbed, the receded gum can never be made to occupy their original positions. In the light of present knowledge, the best treatment would seem to be the establishment of normal functional activity on the part of the jaws and teeth, proper diet, regular prophylactic treatments, plus artificial stimulation of the gums by intelligent use of the toothbrush.

Abrasive gum recession is usually limited to the outer surfaces of the teeth. As a rule, it is more marked in the left cuspid and bicuspid area. Injury by the improper use of the toothbrush, plus, in some instances, highly abrasive dentifrices, explain this type of recession. Abnormally prominent and malposed teeth are most likely to be affected. There is no treatment that can be given that will restore the gums to their normal position or the teeth to their original contour, for both represent tissues that have been destroyed. Careful inquiry into the method of brushing and the kind of dentifrice used should be made. Some dentifrices on the market are highly abrasive and capable of causing serious destruction of tooth substances, especially when the toothbrush is used in a horizontal direction. Thus, it may be possible to prevent further recession.

Inflammatory gum recession, although an unsatisfactory term, is used to indicate a type of recession caused by a preexisting disease.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

The FAMILY HELPS the SPASTIC CHILD

(Continued from page 728)

ness. To correct this, my husband took a long strip of linoleum and drew Kay's footprints the proper distance apart and in more of a straight line, which made a more graceful walk. Kay practiced walking back and forth on this pattern and improved her walking greatly.

By constant work and effort and methods that any parent can use in the home, we have developed Kay into a nice looking young woman. She is developing more poise all the time, has a strong healthy body and fits nicely into the world about her; she desires to continue her education in some college.

It is strange how people who would never think of laughing at a blind child or another cripple will stare and make remarks and even laugh at the spastic child. Kay built up a wonderful resistance to this and learned to go along the street with head held erect and to ignore all unpleasantness.

In all our work with Kay we tried to preserve her natural happy disposition. We did not want her to become too mechanical, so she was encouraged to cultivate hobbies in which she would have a happy outlet for her individual desires. Kay is especially fond of dogs and has a Boston terrier besides hundreds of china dogs of all breeds, sizes and colors. Her stamp collection is extremely interesting to her, and she has a rock collection with many unusual specimens. She has had all sorts of pets, from gold fish to a crow named "Jim." She still loves games and plays a good game of chess. Recently she has been playing "Pick Up Sticks" and Chinese Checkers, which are especially helpful for finger muscles.

We feel Kay is now living a full normal life for one who started out nineteen years ago almost a helpless cripple, and we should like to say to the parents of a spastic child, "Don't give up! Give the little fellow a chance!"

CREDIT

The photograph of three divers used in connection with the article entitled "Swimming Safety" in the July 1939 issue was taken by Cy LaTour.

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IT'S SMART TO SEE WELL!

(*Continued from page 684*)

crossed. When vision has improved sufficiently, exercises are prescribed to train the eyes to work together. If the eyes cannot be straightened by glasses and exercises, operation is usually indicated.

Eye exercises are also advisable for patients who have weakness in bringing their eyes together or those who have other muscular difficulties which are not obvious without special tests.

The third reason for the wearing of glasses is to protect the eyes. Glasses should be worn when the eyes are exposed to too much dust, smoke, wind or other injurious elements. They also may be worn to protect the eyes from injurious radiations as heat rays, glare and ultraviolet rays.

Many people believe glasses add to their appearance or create the impression they desire. This group is usually exploited by every quack and charlatan.

Some eye physicians prescribe lenses if the eyes have slight defects, in the belief that failure to do so may cause eyestrain or other unpleasant symptoms. It is natural that there is a difference of opinion concerning the need for prescribing glasses. Therefore, many equally conscientious eye physicians prescribe lenses only when the patient's complaints cannot be relieved by means of eye exercises or by improving the general health and in cases in which the need for glasses is so great that it obviously must be a factor in causing eye or general symptoms.

If the eye muscles are weak, proper exercises may so relieve the patient's symptoms that lenses may not be required for constant use, and some patients may even discontinue wearing them. Frequently, better distant and near vision and increased comfort while reading may be obtained, sometimes without the use of glasses, by properly selected eye exercises in patients who are farsighted or have faulty vision of middle age.

To respond to a young woman's desire not to wear glasses by saying this idea is merely "foolish vanity" is not a real solution of her problem. To protect her eyes, mind and health with all the advice, skill and technical assistance that eye physicians possess is certainly good medical practice. Also to lead to independence of glasses by treatment of complicating factors, by improving general health and local eye conditions and by safeguarding her against possible dangers by periodic examination in an effort to help her achieve her desires is an endeavor worthy of every eye physician.

An important point to remember is that eyestrain is not the only cause of ocular discomfort and headaches. General diseases, such as stomach disorders, sensitiveness to certain foods, high blood pressure, brain tumors, sinus disease and many other conditions, may produce headache and eye discomfort which, of course, will not be cured by glasses. In many cases, general medical treatment is necessary.

Patients should also remember that there is seldom only one specific thing wrong with their eyes. In many examinations, we find inflammation of the membranes of the eye, granulations of the eyelids, muscular disorders in addition to conditions which possibly may require correction by glasses.

Treating inflammation of the membranes and granulations of the eyelids, also compensating for muscular disorder with eye exercises, takes care of many of the causes of eye discomfort. With the improvement of these conditions, the patient frequently is so relieved that he does not feel the need for glasses or may use glasses only part of the time, especially if in addition to the treatment described, attention is paid to general health, working conditions and illumination.

To refute certain propaganda, it should be known that glasses, even incorrect glasses, will not injure the eyes permanently. Some patients forget how poorly they once saw, and having become accustomed to better vision through wearing correct glasses, they believe the glasses have injured their eyes. Others, of the middle-age group are aware that their focusing power seems to be decreasing and blame their failing vision on the glasses, when vision would have decreased anyway. However, in some cases of farsightedness, constant wearing of glasses may weaken the focusing muscles of the eyes temporarily, and it may require time and possibly exercises to regain the lost strength.

Some patients believe that glasses are prescribed to cure the condition causing poor vision, but usually eyeglasses act to improve the sight only while they are being worn. Glasses do not change the structure of the eye. Improvement in sight requiring correction by glasses depends more on the growth of the eyes and bodily health than on the wearing of glasses. If a person is able to discard his glasses after having worn them for years, the glasses seldom, if ever, can be credited with this achievement. It is true that some who have worn glasses in childhood have later discarded them, not because the glasses cured the condition but because the development of the eye changed the shape of the eyes so that glasses were no longer necessary. Lenses are frequently prescribed when the patient is ill, and these may often be discarded when the patient's health improves. In other cases, lenses are prescribed to overcome disturbances of the eye muscles which, when this disorder is corrected, are no longer required. Therefore, the eye physician sometimes may be able to increase eye comfort and efficiency without prescribing glasses, or he may suggest that they be used only occasionally.

Although some means have been suggested whereby the need for the constant or occasional use of glasses sometimes may be avoided, it should be clearly understood that in many cases glasses are essential for eye and general health as well as for improvement of vision, relief of muscular disorders and prevention of eye discomfort.

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NEW BRAINS for OLD (Continued from page 691)

the operated animal is known as a spinal animal. This means that all influences from above the spinal cord are removed and the animal is reduced to control of its activity by the most primitive parts of its nervous system. If the transection is through the upper part of the stem, the animal is known as a decerebrate preparation, because the cerebral hemispheres are rendered ineffective. The hemispheres may be severed at more than one level. Finally there are refined technics for removing parts of the cortex. These operations have been performed on hundreds of animals. When carefully done, so as to eliminate any possibility of poisoning, the animal will recover and live for some time with a nervous system which quite literally has been whittled down. During the survival period, its behavior can be observed and recorded. In addition, many psychologic and physiologic experiments on such animals have been performed and compared with the results of similar experiments on animals with intact nervous systems.

One of the most illuminating principles about behavior divulged by this method was characterized by Hughlings Jackson in a striking expression. He remarked that a hole in the nervous system does nothing. A sheer hole can hardly be expected to have any effect of its own. What he meant was that alterations of behavior are not caused by the hole but by the remaining parts of the nervous structures. A lesion due to disease, to an injury or to a transection in itself causes nothing. The cut across the ape's midbrain did not stop it from raising its arm. The point is that the structures below the cut still control the arm, but the manner of control is greatly altered. Before the operation, the arm was raised smoothly and without stiffness. Even after the operation, if the new brain area is stimulated by the probe, the arm is raised, and when the probe is removed the arm drops at once. We have seen that this behavior is greatly altered if the old brain area of the transection is first touched by the probe. Then more primitive types of behavior are released. In general, when a lower structure is released either from control by the upper parts or from inhibition normally exercised by the cortex, behavior is less refined; it is apt to be exaggerated and more powerful. It is maintained longer and may be widespread. These types of behavior are known as release phenomena.

In an organism in which the upper parts of the nervous system have not yet been developed, or in a spinal animal whose nervous system has not yet attained complete maturity, one might expect types of behavior suggesting release phenomena in transected animals. The human fetus and the newborn child approximate such an organism. And you do see in the baby's behavior much that simulates release phenomena. It is not necessary to assume an exact similarity of detail; it suffices that the general picture is not dissimilar.

You will recall that Minkowski used a descriptive term concerning early fetal behavior, the term "pre-reflex." When he examined the spinal cord of young human fetuses, he found that many of its elements were poorly developed. Some were in an advanced condition of maturity; others were still embryonic in their development. As the embryo grows, its nervous system is taking part in that growth. But Minkowski uncovered an extremely suggestive fact about the growth of the fetus: All the parts do not grow equally. Some parts lag behind others. Moreover, those centers which lead from the spinal axis to the muscles mature first; then those parts which receive nerves from the outside mature next, and finally the cells which connect across the cord from the incoming to the outgoing system mature last. This seems to be a general principle of development among vertebrate animals, for this finding of Minkowski's on the human fetus has been verified in the spinal cord development of many subhuman embryos.

Now let's come back to that chemical change which is propagated along a nerve and which is called the nervous impulse. Suppose a spot or sense organ on the skin of the fetus is touched. An impulse or a series of them is sent along an ingoing nerve. This chemical or nervous impulse arrives at the spinal cord. Ordinarily in the adult it will travel up and down several pathways along the cord, but it rapidly seeks and finds an outlet to a set of muscles. This is the reflex noted by the neuroanatomist. But in the fetus these pathways are interrupted by cells which still are too embryonic to sustain a chemical change, or at any rate to do it rapidly. Consequently the impulse irradiates to other parts if it gets through at all, and the impulse is transmitted indirectly after a long delay from the cord to the muscles.

Minkowski suggests that this picture of the state of development of the prenatal nervous system explains the kind of slow, massive, uncoordinated and diffuse behavior exhibited by the fetus, which he called "pre-reflex."

After the spinal cord and the brain stem elements have advanced in their development, the structures in the hemispheres mature. The last neural structure to develop is the cortex, and as already seen, its functional development is not completed until a year or more after birth. In fact some of its elements may not mature until ten or more years have elapsed. It is an interesting fact that the last structure to appear in the natural history of the nervous system is also the last to appear in the biography of the individual's nervous system.

So cutting the nervous systems of rats, cats, dogs, monkeys and apes tells us much about the behavior of the unborn child. When this information supplements such studies as are permissible on the human fetus, our knowledge of human development becomes fuller and more reliable. But there is always more to learn. These studies on the beginnings of human behavior are only beginners themselves. For as in an agitated moment Hamlet remarked to a good friend,

> There are more things in heaven and earth, Horatio,
> Than are dreamt of in your philosophy.

This could be paraphrased:

> There are more things in science,
> Than are dreamed of in your philosophy.

For there still remain many enticing unknowns to be discovered. And that, as every research man knows, constitutes the everlasting fun of doing any kind of experimental work.

THE ART OF EATING

(Continued from page 718)

Other factors may enter into the picture. The thyroid and pituitary glands do influence weight; but this fact does not change the general proposition that the individual weight equation depends on the person's supply of food as opposed to his expense of energy. This is not the place for the further discussion of the problem of obesity; but any time and any place is correct for the emphasis of this fundamental fact: In no field has the public been more deluded, more preyed on, than in obesity.

Diet in disease forms a subject which is always a problem indicating a personal interview between physician and patient. A few remarks on borderline conditions may be in order. Since the development of newer studies on nutrition, much attention has been paid to dietary errors not easily ascertainable. Allergy or hypersensitiveness to special foods has opened a wide field of investigation and in many instances has been found to be the cause of obscure illnesses. New developments in the study of vitamins and mineral salts have also yielded information of value in the explanation of disease. Discoveries such as these constantly add to our knowledge and are of the utmost scientific value; but when they are exploited by propagandists and faddists they merely add to our confusion. The results of much careful investigation in the field of nutrition are not yet final enough to be exploited by the untrained or the unscrupulous.

In other respects, too, food has been accused of many crimes for which it is entirely innocent, notably in the case of so-called "food poisoning." Although occasional outbreaks of food poisoning do occur, they are rare and almost invariably affect a group of persons who have all eaten the same food. When an individual gets sick after eating, it is more often true that the person, and not the food, is responsible. It is too easy a logic to assume that illness following food was caused by food, and this tendency to self diagnosis is incidentally highly dangerous. Attacks of gallbladder disturbances, appendicitis or heart disease may have a time relationship to food but are certainly not food poisoning. Of all so-called minor complaints, abdominal pain is the one which most urgently demands a physician's care. Real acute indigestion is rare; but a severe heart attack after a full meal is too common for the peace of mind of middle-aged gentlemen, who like their food not wisely but too well. The "chronic dyspeptic" woman who goes through life continually blaming food for her inability to enjoy life is usually an unconscious rationalist. Her difficulty with food is due either to some physical ailment or to inability to adjust her nervous system to the demands of life. Her food is blamed, then, as the easy scapegoat.

Has food any relation to longevity? One of the big eastern universities has undertaken an experimental investigation of this problem. At the present time, analysis of available data indicates absolutely no relationship whatever, except on the score of quantity. Constant undernutrition and persistent overeating are distinctly harmful and may shorten life. Eating is a pleasant occupation; it should not only provide calories and other food elements but also some of the pleasure of living; yet like all other activities, eating produces its greatest benefits when controlled by moderation. Overeating results in illness: It makes life shorter but not merrier. In fact, excesses of any kind may be included in the list of enemies to a long life. As the individual life progresses and the span of future possibilities becomes lessened, moderation seems to be the best rule of living.

Research workers in the food field have contributed a huge storehouse of fundamental knowledge; dietitians have shown us how to convert mathematical food values into menus. Nutrition is now a science: Eating remains an art, one of the liveliest and most practiced of all domestic arts. Cooking and serving meals are the final steps; a beefsteak properly prepared, served with onions, fresh vegetable salad and a glass of milk really are more palatable and "easier to take" than any given amount of protein, fat and carbohydrate. A plate of good soup will stimulate appetite in a sick man or woman, when an overloaded tray will produce nausea. Meal time should be the time for congeniality; the dinner table is frequently the only meeting place for the family. No matter how humble or how grand the family circumstances, we should aim to make our meals represent a function of living. If we eat to live, we should also eat to live as pleasantly as possible.

A WOMAN FACES FIFTY

(Continued from page 688)

but it must mean at least very unsatisfying sleep.

Most of these complaints seem rather minor matters, excepting to those women who are trying to endure them or their effects on disposition, personality and capacity. The use of the ovarian hormone treatment may stop the symptoms. Though at present it may seem to be rather expensive, the cost will have to be considered in relation to the circumstances of each case and the intensity of the need for relief. There is a small proportion of women for whom the trouble is not so simply stated as has been indicated. The nervousness leads to periods of morbidly increased worry and great depression. Life's obligations become tremendously burdensome. Wives become suspicious of the best of husbands and the closest of friends. The powers of body and mind seem to be slipping away. Increasingly, these women wonder whether life is worth living. It is small wonder that in extreme cases such persons have to be confined in sanatoriums for their own safety or for the peace of their families. Fortunately, this is not the beginning of a permanent mental trouble, unless of course some other aging process or deteriorative disease complicates the situation. Such stormy times may last for months or for a few years, even under careful protection, if only the best medications of the past are used. But with the newly discovered secretion of the ovaries, women who suffer these distressing depressions may be quickly restored to their former state of mental equilibrium and their usual cheerful attitudes. It appears probable also that if the treatment is properly maintained, the duration of the disturbance is shortened.

The most dramatic examples of these problems are found in those cases where it becomes necessary to remove the ovaries surgically or to stop their activity by the use of radium or the x-ray. When this occurs before the natural menopause, a woman is thrown off an essentially healthy balance of her various glands into an unbalanced state in a few hours or days, so these symptoms that have been described may occur in an exaggerated form.

Thus, for example, a young married woman who had earned good wages as an especially skilled worker found herself a changed woman when she left the hospital two weeks after the removal of her ovaries. She had so far lost her confidence that she could not be persuaded, cajoled or forced to walk across a busy street alone. She could not stay alone, so that her husband might go to his work. Her appetite became capricious. From a self reliant and alert young woman, she had become a pitiable picture of despair and of complete dependence on others. It was known that she had no other disease, but she could not believe that anything could be done to help her. Under these circumstances she was given intensive treatment with the hormone products without being kept in a hospital or sanatorium. Day after day she admitted improvement, began to assume her home duties, lost her fears and suspicions and learned to smile as before. But if the treatment were interrupted, the depressed state would come back like a dark tide surging about her. Finally, without help or suggestion from her doctor, she demonstrated her recovery by obtaining a position similar to the one she had held before and holding it under particularly trying conditions. There was a wonderful glow of pride in her face when she came back to report the story of her success. All this time she continued her treatment with the material which replaced the product of the organs that had been removed so abruptly from her body. She was rehabilitated psychologically and economically.

This treatment with the hormones from animal ovaries does not have to be continued permanently in any case. Indeed, continued use over long periods of time by those who do not need it may be dangerous. The process of improvement is illustrated by the gains made by another unhappy woman who was discovered by the visiting nurses. She was no longer able to care for her two sons of school age even with help from her family and neighbors. For eight years she had been enduring the increasing depression and weakening experience of a rather early and severe menopause, which had come in this case without any surgical intervention. Casual examination revealed she seemed to be losing all her mental and physical power. But a change appeared when the hormone products were supplied to take the place of those withdrawn by nature. At first a nurse had to make a daily trip to her home to give her treatments by hypodermic injection. She took up her home work again, a little at a time. Soon the nurse was able to teach her to give her own treatment. She gladly came to the clinic for advice. The nurses who had first seen her found her a new woman. She took an intelligent interest in trying out the different ways of carrying on her treatment. Since the hospital to which she came is a research hospital connected with a university medical school, new forms of the ovarian preparations became available for trial. She tried these under frankly experimental conditions and helped to prove that the hormone can be taken successfully by mouth under the guidance of a physician. Her doses were reduced gradually, and after two years, she no longer needed any treatment. A woman who had appeared a hopeless physical and mental invalid had been restored to a happy existence without having to be separated from her family at any time.

Such triumphs of medicine seem miraculous when compared with the achievements of ten years ago in treating similar cases. Medical men had long believed that these hormones were produced in the ovaries, but efforts to secure pure and dependable supplies had failed. It was only as the result of patient work with uncounted numbers of guinea pigs, rats, mice, rabbits and finally with monkeys that the hormones of the ovaries were really found. Credit for this work is due largely to research men in a number of medical schools in the United States. A discovery in the Cornell University laboratories in New York City was followed by some further discoveries in the University of California at San Francisco. The next steps came at Columbia, Mo., and St. Louis. Without the animal work, none of this could ever have been done. Finally, it was shown that the hormones from animal and human ovaries are identical. Then two of the best known drug manu-

facturing firms began to make supplies of the extracted material for trial in the clinics. Before the new gland extracts were offered for sale, certain doctors in research hospitals were invited to study their effects under controlled conditions of human trial. Women were given the opportunity of using these hypodermic treatments as an experiment. It did not take many months to prove their value for the treatment of the menopause. The first report on the successful treatment of the menopause came from the hospital at the University of Wisconsin and has since been widely confirmed by doctors in many parts of the world. Of course there are a number of other uses for these materials. For about five years the ovarian extracts have been made available through the conventional drug channels to any physician. This discovery of the laboratory has become available within a short time after it was made.

It would be out of the question for any woman to attempt to treat herself with these new ovarian hormones without the guidance of her physician. First of all, there are some other ailments which she might confuse with the menopause. Without medical advice, a woman might be so unfortunate as to overlook thyroid disease, certain infections or some of the diseases of the nervous system, which could be the cause of many of the same symptoms. Furthermore, there are offered for sale many drug preparations said to contain the ovarian substance. Some of these were honest attempts by reputable drug houses to supply something desired by the medical profession, even when the exact nature of the hormones was yet unknown. At times a preparation of a given brand would be helpful, but a later lot of the same brand would be useless. The reason is that for years there was no method available to measure the potency of the product. The manufacturer could never tell in advance whether his tablets could be used. The research work of the last fifteen years has been based on the exact measurement of the effect of a given hormone on a given size and type of small animal in the laboratory. There need be no doubt now as to the value of material which is offered for sale. Recently the special committee on medical matters of the League of Nations has established an international unit for the expression of the strength of all ovarian hormones. The time has come when all physicians and their patients should refuse to use any ovarian hormone unless it has its strength marked in these international units. Such new preparations are somewhat expensive, of course. They will become less so as they are more widely used. But the purchase of medicine of certain value is not as much of an extravagance as the buying of drugs which have doubtful value.

If any woman needs relief from the distress of the menopause, she should now be able to secure it through her regular physician. Thanks to another triumph of research in the medical laboratories, the present generation of women in their fifth decade can face the future with more assurance of physical and mental comfort than has any past generation.

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BOOKS ON HEALTH

Life and Growth

By Alice V. Keliher. Cloth. Price, $1.20. Pp. 245. New York: D. Appleton-Century Co., Inc., 1937.

The subjects discussed include human life and social progress, the individual and the way he grows and new life and social change. The book is interesting. Especially to be recommended is Part II which deals with the individual and the way he grows. The use of reproductions of newspaper articles to bring out points in the text is an excellent device.

An outstanding chapter is number six in Part II about body building and life functions. The author has presented in an excellent manner a problem that is still of great importance to the high school student. This is the problem of height and weight. The discussion in this chapter will do much to restore the equanimity of the growing boy and girl and make them more content with their lot.

Especially to be commended is the use of schematic drawings to illustrate the human body as well as some of the functions of the body. Thus, the menstrual cycle and fertilization are portrayed briefly and accurately.

PAUL A. TESCHNER, M.D.

First Things First

By Agnes Boysen. Cloth. Price $2. Pp. 185. Chicago: Associated Authors.

Character education is the first and most important responsibility of the school, in the view of the author of this book, and the teaching of skills and general knowledge secondary. Ideals and attitudes, rather than skills and aptitudes, are of first importance. The major device used is that of grading the child, not on reading and writing, but on ten selected character qualities, such as reliability, obedience, judgment, initiative and industry. Individual interviews between teacher and pupil offer opportunity to discuss the child's progress and his difficulties.

The author reports much improvement in the conduct of the children both at home and at school, a decrease in the petty delinquencies in the neighborhood, a better understanding of the child by teachers, a better working relationship between school and the home and at the same time an adequate progress in academic development. Also the author advises that the children do not become priggish, introspective or superior in learning to discover their own deficiencies.

The method of character education, taken literally as described, would appear to entail making too much of a virtue of virtue. Such conscious training in "being good" in various ways probably has a place in the scheme of things, but as the chief goal of education it is greatly to be questioned. It is apparent, however, that one must not naively assume that the device described by Mrs. Boysen really represents the essential element in her approach to children. The real situation in the school seems to be the genuine interest in the children shown by the teachers, their sympathy and concern for their special problems, difficulties and needs.

Any routinized attempt to apply the approach described would be futile; but in a "progressive" school setting, where teachers have those personal qualities essential to the favorable influencing of a child's attitudes, the skill and imagination to exploit the teaching situation for more than the mere imparting of knowledge and technics, doubtless Mrs. Boysen's ideas and methods could be utilized constructively. It is my conviction, however, that while external forms of behavior may be achieved or adopted on the basis of conscious demand on the part of authority, this is only "skin deep" unless a genuine relationship of mutual respect, sympathy, interest and, on the part of the teacher, understanding of the individual needs of the child were to provide a background for such demand.

GEORGE J. MOHR, M.D.

"I'm new here. Is this one a boy or a girl?"

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The Microbe Man

By Eleanor Doorly. Cloth. Price, $1.50. Pp. 160. New York: D. Appleton-Century Company, 1939.

The Vallery-Radot life of Pasteur is among the classics of medical biography. Miss Doorly tells the story of a journey through France, in which she visited the places where Pasteur worked and gathered personal information about him. This she supplements, of course, with the material made available in the great biography. Altogether it makes a most inspiring book for young people, is well written and has drama. Her previous book which deals with the life of Faber, the insect man, is well supplemented by this companion volume.

Morris Fishbein, M.D.

Books and Babies

By Garry Cleveland Myers, Ph.D., and Clarence Wesley Sumner. Cloth. Price, $1.75. Pp. 116. Illustrated. Chicago: A. C. McClurg & Co., 1938.

Books have a place in the lives of little children of the preschool age, these authors believe, and parents should do everything they possibly can to encourage the child's familiarity with them during these formative years. This book's aim is to show what great latitude there is in choosing suitable material for the youngsters.

Sibyl Winser Johnston.

Marihuana

By Robert P. Walton, M.D. Cloth. Price, $3. Pp. 223. Philadelphia: J. B. Lippincott Company, 1938.

This is an excellent book dealing with the problem of marihuana in the United States. It gives a history of the hashish vice in Asia and Europe and contains a chapter on the present status of the marihuana vice in the United States. The botanic, pharmaceutic and chemical aspects of the drug have been most carefully reviewed and accurately reported in this volume. It contains considerable description of the technic of administration and of the acute and chronic effects on those who have taken the drug experimentally, and a chapter on the vernacular associated with the use of hemp drugs. The use of "reefers" has become extensive enough to receive the serious consideration of all those interested in the abolition of drug addiction as a social, economic and medical problem.

The volume is designed both for the professional man and the layman and should do much to familiarize the reader with the facts of the existing situation. A complete bibliography for each chapter is included, and the volume is well indexed. It is hoped that the book will awaken the public at large to the seriousness of the problem.

Paul C. Barton, M.D.

Foods—Production, Marketing, Consumption

By Jean J. Stewart. Cloth. Price, $3.25. Pp. 737. New York: Prentice Hall, Inc., 1938.

There are so many problems, political and economic, over which an individual has little control that it is refreshing to turn to an exposition of important questions about which each person may make his own decision. The wise choice of foods is important to every one's health, and the present volume affords the reader the information necessary in order to make a judicious selection under all kinds of circumstances.

As the title indicates, Professor Stewart's volume is a summary of useful data and an account of reliable information about the production, marketing and consumption of foods. Following a brief discussion of the general problem there are thirteen chapters, nine of which are about individual classes of foods. The final three chapters are concerned with the food needs of the individual, of the family and of the nation. Each chapter contains a set of exercises, suggestions for parallel study and a comprehensive bibliography. The book is suitably indexed. There are seventy-six illustrations. In addition to numerous tables throughout the book there is a wealth of information in the appendix, which is made up largely of material compiled from publications of the U. S. Department of Agriculture. Tabular data are provided which show the per capita consumption of foodstuffs in the United States since 1889. Other tables provide information about the approximate shipping season of fresh fruits and vegetables from the different states where these articles originate throughout the year. There are also buying guides for both fresh fruits and vegetables. The complete definitions for various grades of milk are afforded in the Milk Ordinance of the U. S. Public Health Service, here made conveniently available.

There are numerous items in the book which would be suitable for discussion in any curriculum of the academic schedule. Not only is it suitable for classroom use, but it should also be valuable for reference and for reading by all those who are interested in the many problems pertaining to foods.

Franklin C. Bing.

The Stuff We're Made Of

By W. O. Kermack and P. Eggleton. Cloth. Price, $3.20. Pp. 341. New York: Longmans Green & Co., 1938.

The authors endeavor to make a biochemical survey of life a popular subject. Biochemistry is a late arrival in the scientific world; indeed, until physics and chemistry first solved some of the fundamental problems, it was impossible for biochemistry to develop. The reader is gently led through parts of the world of biology and on into the worlds of physics and chemistry. Meandering here and meandering there is the tempo probably in order to bring into view more of the beauty nearby. A less devious route would have hastened the goal and might have been almost as alluring. There are many people whose education has been advanced beyond the average level but who did not stop in their progress to acquire much scientific knowledge. To this large group the book should open new vistas and stimulate their interest in things about them and within them. More than a high school education may be necessary, for there are some mathematical terms and chemical formulas which will be difficult for many readers to comprehend. In developing the sense of proportion in the introductory chapter, the authors say that it is the electrical forces which are all-important in the region of atomic dimensions. The electrical force, for example, between a proton and an electron is 10^{39}—a thousand million million million million million million—times the gravitational force, and so it is the former which regulates the "planetary system of the atom." They have drawn a ladder-like chart to make more obvious the relative size of things. At the bottom they place

the electron and at the top, the universe. Between these extremes of the ladder they place, among other things, the cane sugar molecule, the tubercle bacillus, the flea, man, the whale, the Great Pyramids, Mount Everest, the sun and the Milky Way. The discussion of molecular structure requires the introduction of a few formulas which biochemists no doubt now consider simple. Rapid progress in this field has followed the recent introduction of microanalysis. Twenty years ago in order to analyze an organic compound, at least one tenth of a gram of the substance was required, but it is now possible to do it with one thirtieth of the amount previously required. The development of microanalysis therefore makes possible the investigation of many substances which until recently would have been hopeless to undertake. How far the chemist will be able to go in this direction cannot be answered now. One milligram of a substance contains a million million million molecules. No one can see what the future holds.

The authors finally emerge from the denser foliage into better lighted paths, stopping to discuss such familiar things as what we must eat, hormones in their relation to growth, sex and reproduction, and "the vitamin racket." The history of organic chemistry from the time of Wohler to the present is largely the story of working out the structure of various substances found in plants and animals, and in many cases of synthesizing them by methods developed in the laboratory in the last 100 years. As the science of physiology and later of biochemistry developed, knowledge of the chemical and physiologic processes that occurred in tissues and cells became more and more precise. The result has been a retreat all along the line from the vitalistic view, which insists that there is in living beings a class of phenomena essentially different from that observed in inorganic things. Will this retreat continue? The dualistic view has long been out of date with regard to structure. The issue has not yet been decided in relation to function, but the vitalists have been steadily forced to give up ground. Even the problem of synthesizing man, while admittedly remote and laborious, is not beyond the imagination of the biochemists who took our hands in the front of this book and led us on and on to such heights.

J. F. Hammond, M.D.

Clothing the Child

By Florence E. Young. Cloth. Price, $2.25. Pp. 256. New York: McGraw-Hill Book Company, 1939.

In the purchase of clothing for a child the average parent is concerned first with getting value for the money; second, with the question as to whether or not the clothing is suitable from the point of view of the child's needs in society, and third, with whether or not the clothing is suitable from the point of view of health. This book considers all of these aspects of the question; it opens logically with a history of the costuming of children; then considers the psychologic aspects; next takes up the question of health and hygiene, and next the esthetics involved in finding something suitable from the point of view of the child's appearance. The concluding chapters are concerned with the consumer's reaction from the point of view of getting value for the money expended. The volume is well prepared, written in easily understandable language and should fit equally into courses on domestic economy or into discussions before women's clubs.

M. F.

Microbiology and Public Health

By William B. Sharp. Cloth. Price, $4.50. Pp. 492. Illustrated. St. Louis: The C. V. Mosby Company, 1938.

This is a textbook of bacteriology, microbiology, protozoology and public health. It is intended as a basis for a course in a medical school or school of public health. There are seven parts, dealing respectively with general bacteriology, vehicles of infection, clinical bacteriology and mycology, immunity, public health laboratory, public health field work and surveys, public health office problems, animal parasites and disease vectors. There are 125 illustrations, including photographs, diagrams and tabulations and numerous blank forms for recording bacterial identification procedures, specimens and samples for laboratory diagnosis and field surveys.

The exercises are clearly and concisely outlined, and the required apparatus is well described. The sections on public health are too condensed to be genuinely serviceable.

W. W. Bauer, M.D.

And the Stutterer Talked

By A. Herbert Kanter, M.D., and A. S. Kohn. Cloth. Price, $2. Pp. 236. Boston: Bruce Humphries, Inc., 1938.

This book is in narrative form, and although written in the third person, it is apparent that it is a self portrait of one of the authors. The first eight chapters give an account of the stutterer's childhood, school life and college years in Ohio. The second half of the book is devoted to the author's experiences in New York and his rehabilitation at "Dr. Veronal's" hospital for speech disorders.

This autobiography relates experiences—the trials and tribulations which its author underwent as the result of misunderstanding on the part of parents, playmates and teachers—with a curious detachment but at the same time with the intensity that comes from personal suffering. He portrays vividly the feelings and the handicaps of the stuttering child and his escape into fantasy and daydreams. He tells of his various attempts to find release from his affliction and of being duped by the various charlatans who pretended to have special and secret methods for the cure of stuttering.

Hearing, through a friend, of Dr. Veronal's hospital and his scientific approach to the stuttering problem, the protagonist of our story takes a train for New York, where he arrives practically penniless. He is interviewed by the doctor, who not only accepts him as a patient but waves aside the question of a fee. He begins his treatment, and the remainder of the book is devoted to a description of the various phases of his rehabilitation. The authors use a series of conversations between the doctor and his patients as the medium for giving the reader scientific insight into the problem.

The book is written simply, sincerely and readably, and it is sound in principle and should contribute a great deal toward the better understanding of a complex problem. It should therefore be of interest to the stutterer and to his parents and teachers.

James S. Greene, M.D.

[Note.—Books reviewed or mentioned in this section, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through Hygeia or the American Medical Association. Publishers' addresses will be found at the end of the section.]

Fearfully and Wonderfully Made

By Benée Von Eulenburg-Wiener. Cloth. Price, $3.50. Pp. 472. New York: The Macmillan Company, 1938.

The introduction states that the author "has attempted to present the known facts of the human organism and its functions and to relate man to the universe by considering the phenomena of life on the basis of the energy concepts of modern physics. . . . In this exploration of the realm of molecular dimensions the author stepped beyond the 'immediate evidence of the senses,' the field to which biology often restricts its investigations."

The book itself consists of an extensive compilation of physiologic data, with a certain amount of philosophic interpretation, some of which, at least, is open to serious question. The chapter titles are similar to those of most physiology textbooks. The subject matter of most chapters is presented in considerable detail, even to the inclusion of formulas of complicated organic chemical compounds. The author's style does not make for easy reading, and the meaning of certain portions of the philosophic discussions is rather vague.

The book brings together a great deal of excellent physiologic material, but it is difficult to know for what groups of students and readers it is suitable. It is not adequate for the medical student and yet too difficult for the lay reader.

H. S. DIEHL.

Have You Had Your Vitamins?

By Harry N. Holmes, Ph.D. Cloth. Price, $1. Pp. 60. New York: Farrar & Rinehart, 1938.

Colloid chemists have earned a reputation not only as investigators but as authors who could express their views accurately and well, often with a bit of humor. Professor Holmes is known as a colloid chemist, but in his laboratory vitamin A was first isolated in crystalline form. There is a fine picture of the crystals of vitamin A and of vitamin B_1 in this little book. These illustrations emphasize the advances that have been made in the chemistry of the vitamins.

This book has interest, humor and clarity of expression. It was written for the intelligent housewife and for all those interested in vitamin therapy.

The amounts of vitamins which the author lists in the appendix as daily requirements are usually high for vitamins A and D and usually low for vitamins B_1 and G. It would be difficult to select foods to meet these requirements. It is interesting to note that Professor Holmes includes as supplements to the diet, which will provide vitamin G, certain "A, B, D (G)" capsules or tablets. Few of these preparations on the market provide more than an insignificant fraction of the standard dietary allowance of vitamin G.

F. C. B.

Modern Methods in Archery

By Natalie Reichart, M.A., and Gilman Keasey. Cloth. Price, $1.50. Pp. 127. Illustrated. New York: A. S. Barnes & Co., 1936.

This book aims to instruct the beginning archer in the fundamentals of technic and equipment. While the subject matter is presented from the teacher's point of view, the material may be easily grasped by the self instructed amateur.

S. W. J.

Our Cereals

By Mary S. Rose and Bertlyn Bosley. Paper. Price, 35 cents. Pp. 34. New York: Teachers College, Columbia University, 1938.

Children who used to devote all of their time to geography and mathematics now spend a good deal of time in school learning about food. Since food is probably the most important single item in the family budget, it is well that it has been drawn thus closely into the curriculum. Prof. Mary Swartz Rose and Bertlyn Bosley have prepared a unit for fourth, fifth and sixth grades dealing with the place of cereal foods in the human diet. The children's interest is aroused by teaching them to distinguish various grains. After they understand the structure of the grains and have had opportunity to prepare and taste at least one of them, they study the relative value in the diet of the grain prepared in various forms. The study also includes feeding of rats. It concludes with the comparative costs of cereals. Thus scientific study of diet is integrated into the curriculum. The book also provides suitable outlines for examinations.

M. F.

A Girl Grows Up

By Ruth Fedder, M.A., Ed.D. Cloth. Price, $1.75. Pp. 235. Illustrated. New York: McGraw-Hill Book Company, Inc., 1939.

An understanding treatment of the problems of the adolescent girl is presented in this book. It will prove revealing for so many parents who are too well "managed" by their offspring, and it will also help the girl adjust to the ever-changing scenes of adolescent life she confronts.

S. W. J.

Fist Puppetry

By David Fredrick Milligan. Cloth. Price, $1.50. Pp. 125. Illustrated. New York: A. S. Barnes & Co., 1938.

A fist puppet is fitted over the hand and forearm and cavorts by the will of the fingers underneath. This book describes how the puppets can be made; how much they cost; how to construct a theater; how to adapt plays and all other practical details necessary in the production of fist puppetry plays.

S. W. J.

Industrial Hygiene

By Lawrence B. Chenoweth, M.D., and Willard Machle, M.D. Cloth. Price, $2. PP. 235. New York: F. S. Crofts & Co., 1939.

This book is prepared as a handbook for engineering students who are interested in industrial hygiene, but it will serve equally well as a book of advice for any one interested in industrial medicine. It is full of useful statistics and presents a good reference to basic sources in the field that is covered. Special chapters are concerned with occupational diseases, occupational intoxications, dust diseases, first aid and similar measures.

M. F.

PUBLISHERS' ADDRESSES

The following list contains the addresses of publishers whose books are reviewed in this section:

D. Appleton-Century Company, 35 W. 32nd St., New York City.
Associated Authors, 222 W. Adams St., Chicago.
A. C. McClurg & Co., 333 E. Ontario St., Chicago.
J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia.
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A. S. Barnes & Co., 67 W. 44th St., New York City.
C. V. Mosby Company, 3525 Pine Blvd., St. Louis, Mo.
The Macmillan Company, 60 Fifth Ave., New York City.
Farrar & Rinehart, 232 Madison Ave., New York City.
McGraw-Hill Book Company, 330 W. 42nd St., New York City.
F. S. Crofts & Co., 41 Union Sq. W., New York City

Atlas Photos

Diverting the child's attention to other activities is the procedure calculated to bring about a cure of certain of these habits.

NERVOUS HABITS

***Infants may manifest many annoying little actions which require deft handling to effect a cure, as shown by* WILLIAM I. FISHBEIN**

NAIL biting is seldom seen in children under 3 years of age. Like thumb sucking and other nervous habits, it may easily be checked when it first starts and similarly may be just as difficult to cure once it has been firmly established.

The old-fashioned method of treatment by painting the tips of the nails with a solution of aloes is quite useless as a rule. Even wearing gloves does little good, although it has been suggested that wearing gloves, the tips of which have been impregnated with a strong solution of mustard, will cause the habit to be relinquished.

If such simple measures as these fail, it is probable that the habit cannot be broken until the child is instilled with a desire to break it. This may be accomplished by offering rewards in some cases; in other instances, particularly in the case of girls, appealing to pride may help. These methods, however, apparently have but little value until the child has reached 8 or 9 years of age. At this time, also, the youngster may be given a nail file and encouraged to use it when the desire to bite his nails appears.

There is a tendency for this habit to be indulged in particularly at times when the child is occupied with other things, such as viewing a movie or reading. Hence, he bites his nails almost unconsciously, which adds to the difficulties of breaking the habit.

Nail biting may manifest itself in children who are not particularly of a nervous temperament. Hence, those measures which ordinarily are used to overcome nervousness in general are often of no particular value.

It is difficult to imagine a habit which is so often as perturbing to parents as infantile masturbation; yet it should cause no greater concern than any other nervous habit, such as thumb sucking or nail biting.

This habit is a common one, especially in small babies. It usually takes the form of rubbing the thighs together or wriggling about in bed. The baby's face generally becomes flushed and perhaps breaks into perspiration. The breathing is sometimes hurried. It has been believed that the habit may result from some form of local irritation, but in many instances, careful search fails to reveal such a condition. The habit is comparatively harmless, except when symptoms of exhaustion occur due to the frequency with which the act is performed.

If an effort to treat this habit is to be made at all, it must be rigidly carried out, because fixing the child's attention on the habit will only tend to make it worse and thus make its breaking all the more difficult. One of the most important points in the cure is for the mother to banish from her mind the idea that the child is showing any precocious sexual development. She should be encouraged to take a reasonable view of the difficulty. The habit should be viewed as a disgusting habit, but those in charge of the child should be careful to hide any alarm they feel.

Appeals to the child are useless. The youngster will not have the

self control to resist successfully, once the habit is formed. Punishment is valueless and will in all likelihood act as a deterrent to a cure. It is unwise to show anger. Change of surroundings and an attempt to divert the child's energies in another direction will help.

Devices for restraint are difficult to employ, and unless rightly used, are of little value. If the child can be persuaded that the restraining device is being used to straighten his legs or correct a deformity of the spine, it might be employed with safety; otherwise, the parents must depend on diverting the child's attention to other activities.

Sedatives may be prescribed by the physician to children who are unusually quick and sleepless, particularly when the habit has resulted in exhaustion, which causes them to be irritable. Nervous exhaustion may be as much the cause as a result of the masturbation.

Nervous children are liable to acquire one or another of a large number of tics, or habit spasms. The most common of these are blinking or screwing up the eye, frowning or raising the eyebrow. These habits may be formed as a result of some irritation, such as inflamed eyes, defective eyesight or an ingrown eyelash. They often develop from imitation of some other child who is similarly afflicted.

A tic of this kind may last throughout life, if not corrected in its early stages. Thus, any measures, even drastic ones, which hold any prospect of success are to be encouraged. The first step is, of course, to remove any source of irritation which may be present. Then underlying nervousness should be dealt with, which means employment of proper diet, the establishment of good habits of rest and sleep, the removal of excess stimulation by adults and curtailing school work or outside activities.

Sometimes a tic involving the eyes may be overcome by bandaging the eyes and keeping them covered for a period of ten days, followed by the wearing of smoked or colored glasses; otherwise, completely ignoring the habit offers the best chance of a cure.

Similar spasms, called histrionic spasms, include facial movements, grimacing, showing the teeth, lifting one corner of the mouth or shrugging the shoulders. These habits, too, are most likely to develop in

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When selecting shoes for your growing boy or girl allow plenty of time for a careful fitting. Here are five points to consider when you buy your children's shoes:

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Is the shoe roomy above the toes, but snug at the heel and over the instep? It should not be pointed, high-heeled nor thin-soled.

Is the inner edge of the sole straight and in line with the heel?

Are the shoes flexible?

Have you made sure that the sole under the ball of the foot lies flat, not bending up at the sides? Put your hand into the shoe to see that there are no bumps or rough places.

If there is a baby in your family, remember that his feet are soft and pliable. Pressure from socks that are too short — even shrunken booties — may permanently misshape his feet. Socks as well as shoes need to extend a little beyond the longest toe and should be sufficiently roomy for his toes to wiggle.

The child of school age, also, needs shoes and stockings with plenty of room for growing feet to expand. Young feet grow fast. As soon as stockings and shoes are outgrown they should be discarded, even if they are not worn out.

Every child should be taught to walk correctly—keeping the weight on the outer edge of the foot and with toes pointing straight ahead, neither "toeing out" nor excessively "toeing in." "Toeing out," particularly, weakens the ankles and arches and is a common cause of foot trouble.

As the child reaches adulthood overstrained arches may flatten. One of the first symptoms of "fallen arches" is a pain under the arch and up the calf of the leg. Correct treatment and properly constructed shoes will generally restore the foot to full usefulness.

The Metropolitan booklet "Posture from the Ground Up" tells how to guard children's feet against abuse and how to overcome many adult foot troubles. A post card will bring you a free copy. Address Booklet Department 839-Z.

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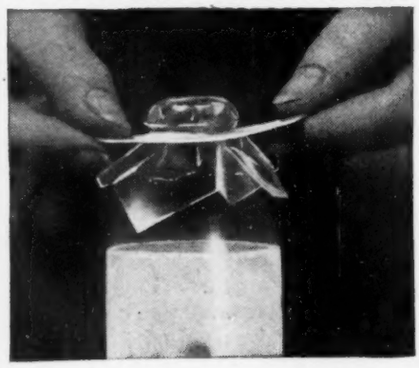

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emotional and excitable children. The kind of treatment with the greatest chance of success will depend on the age of the child. In any event, the condition should not be allowed to get on the nerves of the child or the parents. Punishment and ridicule are equally ineffectual in the cure. The child may be encouraged to practice slowly, in front of a mirror, movements of the muscles which are involved in the spasms. It is also important to determine whether the spasm occurs when the child is unoccupied, or if it develops when he is making some special effort. In the latter instance, it is important to lessen the amount of school work or other physical activities demanded of the child. In those instances in which the spasm occurs at the time the child is unoccupied, distracting the child and turning his energies into some directed pathway of play will be helpful.

Head knocking and body rocking occur, for the most part, in children who are mentally defective, though also found frequently in normal children. These movements are not easy to restrain; but the child's energies may be turned into less objectionable directions by providing him with toys which require the expenditure of muscular effort. Rattles and music boxes with a handle often prove satisfactory. In normal children, these habits seem to disappear with increasing age and intelligence.

QUESTIONS FROM MOTHERS

Activity

To the Editor:—Does the type of food I feed my baby influence the fact that he is extremely active every waking minute?

A. T. Q.

Answer.—Generally speaking, the nutrition of the infant is not a factor in causing the amount of his activity. Experiments have proved that there is no specific food that can have any influence at all on the baby's activity.

Cathartics

To the Editor:—Do all infants need daily or weekly cathartics? When should I give a physic?

E. Y. P., New Jersey

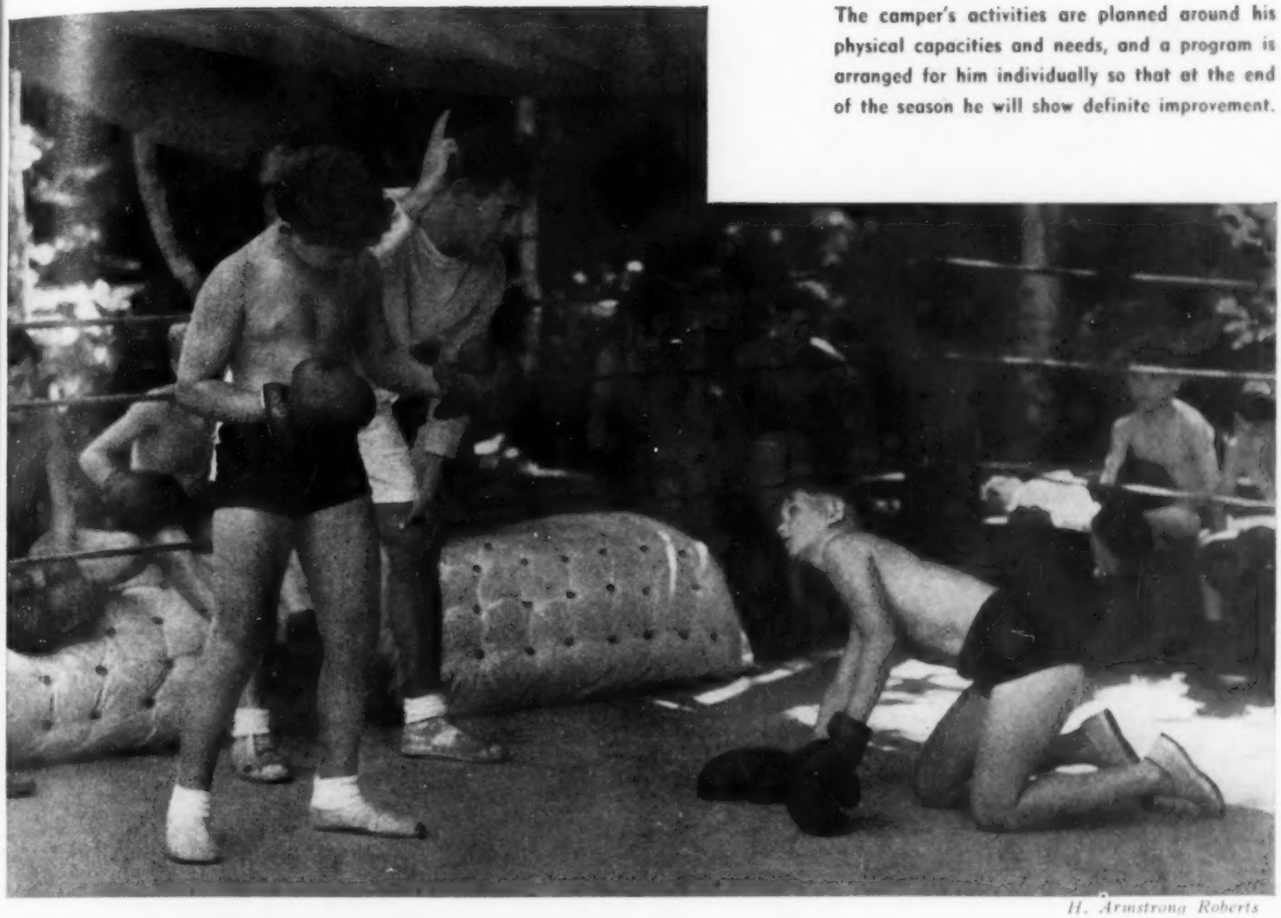
Answer.—Cathartics should never be included in the baby's regimen. The muscles of the intestine will never do their duty and develop to do it so long as their work is done for them. Every infant can be fed so that the bowels will work normally. Your doctor will advise you if a cathartic is ever necessary.

Summer Baths

To the Editor:—How frequently should the baby be bathed in the summer months?

R. P. J., Iowa

Answer.—Not only should the baby have his morning bath, but usually one at night also. On very hot days a third one at noon before the midday nap adds much to his comfort.



The camper's activities are planned around his physical capacities and needs, and a program is arranged for him individually so that at the end of the season he will show definite improvement.

H. Armstrong Roberts

SCHOOL and HEALTH

Conducted by J. MACE ANDRESS, Ph.D.

HEALTH LESSONS FROM SUMMER CAMPS

THE summer vacation is now drawing to a close. Soon thousands and thousands of boys and girls will be breaking camp in their attractive surroundings of forest, lake, mountains and sea to return home to the opening of school. Browned by exposure to sun and wind, grown stronger in muscle, taller in height, heavier in weight and richer in experience, they resume their more formal studies. They have participated in one of the unique experiences of American education, for camp life is different in many respects from formal education in its content and emphasis; yet it may still be classed as a factor in a child's education. What are some of the suggestions that we may get from camps? Before attempting to answer this question, it should be said that there is a great difference among camps. Some of them are poorly conducted and merely provide busy activity for boys and girls. Others are high grade camps that have won distinction in a new field of education. What are they doing that is suggestive for the rank and file of teachers?

Probably the first thought is physical well-being. At the beginning of the movement, camps for malnourished and sick children played a conspicuous part. Gradually camps for well or average children increased in number. And even then, health became the most prominent goal. Unconsciously they tend to express the great philosophy in those lines of Rudyard Kipling in his "Land and Sea Tales for Boys and Girls":

"Nothing on earth—no arts, no gifts, nor graces—
No fame, no wealth—outweighs the want of it.
This is the Law which every law embraces—
Be fit—be fit! In mind and body be fit!"

When entering our best camps, every boy and girl is either given a physical examination or furnishes a certificate from his or her family physician. This information is used effectively in plannng the camper's activities. The child with a cardiac disability, for example, is not allowed to participate in activities that would be harmful. The physical needs of every child are studied and a program arranged so that at the end of the season real progress may be observed. All roads in a well managed camp point toward health. A trained dietitian plans the menus; reliable

cooks prepare the food; on pleasant days there are many outdoor activities, such as swimming, hiking and horseback riding in the open air. On rainy and stormy days there are plays, games, dramas, music and other forms of indoor entertainment. Camp houses or tents provide excellent ventilation. There are long hours for sleep. Every boy and girl is carefully studied by an alert counselor so that individual needs may be discovered and satisfied. The camp director is a real educator with a broad background of camp experience. His interest lies in working with youth. Throughout the camp there is a spirit of happiness that emerges from the success that follows well directed play and work.

The summer camp does not forget mental health. In a striking way it demonstrates the possibility of a school without books, tests, examinations or marks. Our public schools are in a rut, in which they find it difficult to think of a school without books beyond the kindergarten. Nursery schools, kindergartens and the large literature about the growth of little children have furnished valuable suggestions for the upper grades. The progressive school movement has been quick to see the advantages of a freer school program and all that it means for mental health.

In many ways the summer camp offers ideal opportunities for training in mental health. The camp is centered about the child or youth, and it is concerned with his broad development, rather than with his acquisition of material learning. There is an interest in seeing that they develop new interests and strengthen traits of character, such as courage, initiative and self reliance. They learn how to get along with each other by actually living together. In some cases this is vastly more important than learning ancient history or factoring in algebra. There is usually enough "roughing it" in a summer camp so that campers have a chance to learn to meet difficulties. Friendships are often made that last through life.

Although our public schools are handicapped in carrying on the activities of a camp, they do suggest many possible changes of emphasis in our school programs. Such changes would help us to realize the ideal of Kipling:

"Be fit—be fit! In mind and body be fit!"

Food for Thought

By CARRIE L. LEONARD

Teachers of slow children will be interested in this experiment on children who are below average in intelligence. Miss Leonard teaches at Lincoln School in Akron, O.

ONE of the gravest problems confronting educators today is that presented by the "slow" child. In the large industrial cities, fully 25 to 30 per cent of the children entering the first grade have mentalities lower than the average. How to develop these children is a challenge to the ingenuity and resourcefulness of the modern school system.

Recently I met this challenge with a method which was at once startlingly effective and simple.

I was delegated to teach a group of thirty-seven children who had entered school for the first time. Although they were of the required school age, their mental ages ranged from 3 years, 11 months, to 5 years, 10 months. Normally such a group would be required to spend more than one year in the first grade in order to complete the work set up for that period. An I. Q. (Intelligence Quotient) of from 90 to 110 is considered normal. In this group there were children with I. Q.'s as low as 61. Little Bertha with a mental age of 3 years, 11 months, was a highly nervous talkative type with steps awkward and uncertain.

We made cake, pies, salads, ice cream and many delicious foods after the first success with cookies. To make and to taste—that was the secret.

Twenty-two children who had speech defects, some of them serious ones, were tested by a competent doctor of speech who left recommendations to be followed. Peggy had a hearing defect which would have placed her in a special lip-reading school, but since she was so underweight and delicate and to go to this school necessitated riding a bus twice a day, we kept Peggy with us.

Many of the children were frightened, nervous and cried easily; David was greatly overweight and subject to fainting spells; Billy tried to run away every chance he got, and Gerald put me through one of the severest physical as well as verbal battles I had ever experienced. He was attempting to let me know firmly and not too gently that he was boss. Others were listless and definitely undernourished.

Believing that incessant activity is the outstanding characteristic of child life, we began to construct, to create, to build things: a store, a filling station, an airport.

This was going to be a difficult and trying experiment.

I had always contended that to create a sense of failure in a child, particularly a first-grade child, was nothing short of tragedy. My little children must succeed in order to prevent the inevitable inferiority complex, which is so detrimental to the mental, physical and emotional growth and harmony of child life.

I soon found that ordinary methods, used successfully in other years were of no avail to this group. Believing that incessant activity is the outstanding characteristic of child life, I made way for a full activity program. We began to construct, to create, to build things: a house, a store and a library. My little folks were progressing, but not enough to give me any hope that they could possibly aspire to the heights of achievement that the normal standards set up for first graders.

Formerly I had practiced, with some degree of success the "kinesthetic method" in teaching semi-slow groups. This method stresses teaching through the sense of touch in conjunction with the normal method of teaching through the auditory and visual senses. However, with this group even the kinesthetic method did not produce the results I had hoped to accomplish.

This thought then occurred to me. If the senses of sight, of hearing and of touch play so important a part in the process of learning, why not go a step further and put into play the remaining senses, those of taste and smell? The next day I took to school a huge old-fashioned glass dish filled with jelly beans. I hid the dish and wrote in the "Good News" corner,

"I have something for you.
It is something good to eat.
We will eat it."

I told them what it said, "Eat." There was never such a word before. Some children clapped their hands, and one of the most shy forgot himself and smiled. What a jolly time we had.

I then asked them if they would like to make cookies. To *make* and to *taste!* This would be more fun than merely finding and eating jelly beans as we did the day before!

The next day a kitchen and larder were completed. As they read the cooking recipe from the blackboard I called attention to the printed word "vanilla," as each one smelled the vanilla. A few weeks later little Bertha told me that whenever she saw that word vanilla, she could just smell it. The children began hunting recipes at home and bringing them to school. We made cake, pies, salads, ice cream and many other delicious foods.

Delightful, happy days followed, as well as fruitful ones. No tears, no nervousness, no tantrums were seen now. As Gesell has said, "Happiness is the vitalizing energy of child life. It will chase out all idleness and listless awkwardness and set the body in harmonious accord." They learned to read anything and everything in sight. Athenaeus must have been right

when he said, "Every investigation which is guided by principles of nature fixes its ultimate aim entirely upon gratifying the stomach."

With the exception of one child who had been ill a greater part of the school year, the entire group was ready for the second grade at the end of the first year.

At the middle of the second year several of this group went into the brightest second grade. Even Doris with an I. Q. of 73 was placed in the brightest group and successfully carried on her work beside children with I. Q.'s as high as 135. The entire original group went on to a third grade.

And from there? I sincerely believe that they will go on and on, taking their places as better members of society and far happier because they have been *able* to do so.

Can it be done?

It was done with Food for Thought.

Teaching Personality Development

By JEAN V. LATIMER

In the last of her chronicled "Little Journeys Among High Schools" in Massachusetts Miss Latimer deals with the development of the personality of boys and girls. This is one of the newer aspects of health education deserving careful consideration by every teacher of a high school staff. Miss Latimer suggests many habits which need to be performed to promote mental health. She is the coordinator of health education in the Division of Child Hygiene of the Massachusetts Department of Public Health.

MENTAL hygiene is an aspect of health that is receiving greater attention from the educator. Since mental health is caught as well as taught, we find high schools are considering mental health as an integrated aspect of the entire school curriculum. However, I do find that through health education courses, guidance work and even in the social studies, the high schools are trying by classroom teaching to assist youth in understanding himself and adjusting himself to others.

While it is recognized that we cannot define personality in material terms, we can teach some of the traits which go into the sum total. Dr. Francis Spaulding of Harvard University directed a survey of New York's secondary schools in 1936 and uncovered a fact which has not been sufficiently noticed. He discovered by actual testimony of employers that the first factor they consider when hiring a person is his personality. Further, by actual word of employers, this factor was third in the list of reasons for promotion in service.

The schools are trying in several ways to teach something about the development of a desirable personality. Teachers say that they find it advisable to avoid emphasizing abnormalities, even referring to the word "complex"; nevertheless, pupils of high school age are studying many of the simple pamphlet materials on the topic of mental hygiene.

Not long ago I visited a class where the teacher was asking what was meant by mental health, while comparing physical with mental growth. This teacher pointed out how the body and mind were interrelated, and how man has a control over his environment superior to all other creatures because of his highly developed brain and his central nervous system.

The following points had guided the reading of the class:

1. Is a strong, healthy body all that is necessary for success and happiness in one's work?

Ewing Galloway

The schools are trying in several ways to teach something about the development of a desirable personality, for employers say that this trait is their first consideration.

2. How does a daily regimen of healthful living affect mental health?

4. What is meant by satisfactory adjustment to the social group? Discuss and list some of the qualities of leadership.

5. What is the relationship of habit formation to personality development?

6. List some of the good mental habits mentioned in your reading.

7. List five good rules for developing mental health and good personality.

This discussion led up to having the pupils each appraise himself on a self rating scale. For example, on this self rating scale, under Temperament were considered such questions as: "Are you a good sport? Can you take success and defeat equally well? Are you troubled by undue fear, shyness or timidity? Do you accept deserved punishment without trying to shift the blame?"

Under Perseverance each pupil rated himself on such points as: "Can you concentrate your mind on some disagreeable task when you know it will help you? Do you work steadily, efficiently without day dreaming? When you attack a task do you do it right away or do you delay until the last minute?"

Under Sociability were such items as "do you work cheerfully for the benefit of the majority in any group activity? Do you accept responsibility and opportunities to lead? Do classmates want you on their teams and in their clubs?"

Under Character, such items as these were included among those checked: "Can you be counted on to stand up for the right thing when you are laughed at or embarrassed? Do you always stand for a square deal for everybody?"

In several schools there is a trend toward the teaching of the simple principles of psychology, especially as applied to habit formation. Although in the past we have always considered the writings of William James suitable only for college students, I found that one teacher had assigned for the class reading his famous chapter on habit formation. An examination of some of the outlines which the pupils had made readily showed that such writings were well within the comprehension of senior high school pupils.

This teacher had had the class make a list in their notebooks of at least twenty varied activities performed each day. Next to each was written whether it was a reflex action, a habit or a conscious act. The value of good habits had been stressed, and even such a habit as politeness and the necessary steps to take in establishng such a habit had been analyzed. Also included in this study was what a pupil would do if he wished to break himself of the habit of interrupting other people's conversation.

Since studies in the field have brought out pointedly that high school pupils do not get enough sleep, attention was being given to the problem of the amount of sleep necessary for the proper care and development of the nervous system.

This teacher had also conducted a survey to see how many of the class were getting nine or ten hours of sleep. Reasons were discussed why individual pupils were not getting enough sleep, and the class also talked of ways of improvement. Each pupil kept for a week a record of the time he retired and the time he got up in order that he might see for himself just what he was doing.

While the topic of stimulants and narcotics is important enough for core learnings; nevertheless, since there is a social significance to the use of alcohol and drugs, the relationship to a healthy personality and desirable socal behavior is one which I find being increasingly stressed.

In this study of personality which I have referred to previously, I found a class consulting reference books in order to learn the findings of science on the effect of alcohol on the body—particularly on the growing body. Also such problems as these were discussed: "Should personal liberty mean that you may do as you please?" "What is the social and personal significance of allowing a person under the influence of alcohol to use an automobile?"

The class had listed natural stimulants which were more beneficial to the nervous system, such as cold air, a cold bath, sunlight, physical exercise, absorbing interests, joy in accomplishment, wholesome emotions and social contact with friends.

At the close of the unit, a discussion of case studies of undesirable social behavior brought out concretely some of the understandings developed in the study and showed what would be a constructive modification of behavior so that more adequate social adaptation could take place. Here are some of the cases studied:

1. George could not do his school work and received low grades. He began to act sick so that everyone would have to nurse him and pay a lot of attention to him.

2. Sam wanted a bicycle. His parents could not get it for him. He became cross and cried about it.

3. Mary thought that people did not like her. She spent most of the time alone thinking about herself as a great social success.

4. Harry believes that everybody is crooked.

5. John, while playing ball, broke one of the school windows. He said nothing about it.

6. Harry was being constantly teased by the boys. He showed that it made him very angry.

7. Peter received low grades in school. He said, "I'm glad of it. Most great men received low grades in school."

8. Earl wanted to build a radio, but he could not afford the parts. He spent a lot of time wishing that he could afford to build the radio but did nothing to earn any money.

9. Frank was caught stealing. He said, "I would not be in this trouble if it were not for bad luck."

10. Floyd was always in trouble. When he got into trouble he said it was someone's else fault. He said, "If it were not for other people, I would be a lot different."

Apart from physical abnormalities and disease, the health problems of adolescence are primarily psychologic and social. Therefore, I think that we all agree with Dr. Ruth Strang, who, in writing on health education in the recent issue of "Child Development and the Curriculum—Thirty-Eighth Yearbook of the National Society for the Study of Education," says: "With the increased social consciousness and social sensitivity of this period, it is appropriate that the social aspects of health be emphasized."

To Contributors:—*The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length and must be typewritten double spaced. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

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PLEASE MENTION HYGEIA WHEN WRITING ADVERTISERS

Foods in the Body

By ETHEL AUSTIN MARTIN

Classes that have followed Mrs. Martin's guidance in performing the suggested experiments will enjoy these last experiments in the twelfth of her series, "Food Experiments for the Classroom." She is Director of Nutrition Service at the National Dairy Council.

WHEN foods have been digested by breaking them down from complex to simple substances, they can then be used to perform their many functions in the body. Previous articles have pointed out that one important function of food is to provide energy and heat for daily activity and to keep the body warm. Foods do not actually burn in the body when they yield energy and heat, but they go through a similar process, which is called oxidation. Calories of heat are thus produced, and we are furnished with energy for work and play.

Oxygen is one of the gases in the air. We must breathe oxygen in order that foods can be "oxidized" or burned in the body. Oxygen is a waste product given off by plants in the sunlight, and green plants help to keep the supply of oxygen in the air fairly constant. When foods burn in the body, carbon dioxide is formed as a waste product. It is given off from the body when we breathe, just as an engine gives off smoke.

This article consists chiefly of a few experiments which demonstrate processes related to the oxidation of foods in the body. They are simple tests which can be performed in practically any classroom. In order to make the application to body processes, however, classroom discussion covering the subjects should precede and follow the actual experiments.

Finding Out How Foods Are Used in the Body

Problem (1)

To find out which foods will burn to furnish heat and energy.

Materials

Raw meat
Bread
Fat from meat
Butter
Sugar
Salt
Dissecting needle or forceps
Bunsen burner and tripod
Asbestos sheeting

Twenty-Third Experiment

Put small amounts of the listed foods either on the asbestos sheeting placed over the flame or on the dissecting needle. Notice which ones burn. Some foods such as milk must be dried (water evaporated) before they will burn.

Results

All of the foods listed, except salt, burned quickly. Salt does not burn at all.

Conclusions

Many foods burn when placed over a fire. Foods which burn give off heat and energy.

Problem (2)

To show that green plants are one source of oxygen, which is needed for burning foods in the body.

Materials

Glass jar
Elodea (or some other common aquarium plant)
Water
Small glass plate
Shallow pan of water

Twenty-Fourth Experiment

Put a few branches of Elodea or some other common aquarium plant in a glass jar or wide mouth bottle. Fill the jar with water. Cover it with the glass plate while turning the jar upside down in the pan of water. Then remove the glass plate, letting the mouth of the jar rest on the bottom of the pan. There should be no air bubbles in the jar at this time. Set the pan with the jar in the sun for several hours. Examine the appearance of the bottle thoroughly.

Results

Bubbles are formed in the bottle and rise to the top. Gas (oxygen) collecting at the top forces some of the water out of the bottle.

Conclusions

Green plants give off oxygen when they are in the sunlight.

Problem (3)

To find out a test for carbon dioxide, which is a waste product from burning foods.

Materials

Glass jar
Candle
Lime water
Wire
Glass plate

Twenty-Fifth Experiment

Fasten a wire around a candle so that it can be lowered by the wire into the glass jar. Light the

candle, and place it in the jar. Cover the jar with the glass plate or a cardboard. The burning candle gives off carbon dioxide and uses up the oxygen in the bottle. When the oxygen is exhausted the light goes out. As soon as this happens, remove the plate quickly and pour some lime water into the jar. Cover it again, and shake it. Note what happens to the lime water.

Results

The lime water is changed from a clear to a cloudy liquid by the carbon dioxide in the jar.

Problem (4)

To test for carbon dioxide, which is a waste product of the air we exhale.

Materials

Lime water
Test tubes
Filter paper
Funnel
Glass tubing or soda straw

Twenty-Sixth Experiment

Fill a test tube two-thirds full of filtered lime water. Insert a soda straw or glass tube and blow into the lime water. Notice what happens to the liquid.

Results

The lime water becomes milky, thus showing that we breathe out carbon dioxide.

DANGER OF CARBON MONOXIDE POISONING

Chronic carbon monoxide poisoning may result from the domestic use of gas and oil and from riding in closed motor vehicles which have defective engines and exhausts, H. G. Beck, M.D., Baltimore, pointed out recently in the *Review of Gastroenterology.*

He said that while eighty-one occupations have been listed in which workmen are exposed to the danger of carbon monoxide, these two possibilities are not generally recognized. About 5 per cent of closed motor vehicles, however, have been found to contain dangerous amounts of carbon monoxide.

Errors in diagnosis are undoubtedly frequent, for many cases have symptoms similar to those in peptic ulcer: loss of appetite, nausea, vomiting and abdominal pain. Nearly twice as many workmen employed in gas plants become ill as those engaged in occupations not involving exposure to carbon monoxide.

EXPECTANT FATHERS

TAKE NOTICE

IT IS IMPORTANT to make your plans for fitting the baby into your home as early as possible. I have seen mothers and fathers go through terrible days—those first few weeks after the baby comes home from the hospital. No plan is made; the house isn't organized to take care of the newcomer. It takes the baby just about three hours to throw the whole place into confusion, even if he doesn't do anything but lie on his back and cry. Wet diapers hang everywhere. The kitchen is in disorder. The mother is worried and exhausted, and the father is not only discouraged but downright disagreeable . . .

"If you live in a place where you can use the diaper service it will undoubtedly save you lots of work. I would certainly investigate the diaper services before I bought any diapers. A good diaper service delivers a supply of sterilized diapers in safely sealed packages twice a week. They also provide a container in which to keep the soiled diapers and a solution which makes them odorless. And one of the nice things about a good diaper service is that, if you have already bought the diapers and decide that you don't want to keep them, they will buy them from you."

EXCERPT FROM "GETTING READY TO BE A FATHER"

A New Book by Hazel Corbin

GENERAL DIRECTOR, MATERNITY CENTER ASSOCIATION
NEW YORK CITY

Medical News

OF THE MONTH

Serum Sickness

A ray of hope for those who suffer untoward reactions from the administration of serum for such conditions as tetanus, diphtheria, scarlet fever and pneumonia, is contained in a paper by Lee Foshay, M.D., Cincinnati, and O. E. Hagebusch, M.D., St. Louis, in *The Journal* of the American Medical Association.

A preparation known as histaminase was given by mouth or intramuscular injection to twenty-two patients with unfavorable reactions to serum, the authors report. Twenty of these experienced definite relief in from one to thirty-six hours after taking the preparation.

While only rarely fatal, serum sickness is frequent and often severe. Its symptoms, which include intolerable itching, nausea, vomiting, redness of the skin, wheals, headache, chills and the like, may follow any time from a few hours to as much as seven days after the administration of serum.

Stuttering

Some cases of stuttering appear to have a definite basis in biologic inheritance, Severina E. Nelson, Urbana, Ill., concludes from a study of 204 stutterers on which she reported recently in the *Journal of Pediatrics.*

One hundred of the subjects had no significant history of stuttering in their ancestry, but the remaining 104 came from families in which the affliction occurred in two or three generations. A majority of those with a family background of stuttering began to stutter when they were learning to speak; while a greater percentage of those in the other group were first afflicted after the onset of speech.

A significant percentage of those in the second group had diseases or other precipitating factors coincident with the onset of the stuttering as compared with those in the former group.

The manner and character of the accidents, frights and diseases which seemed to bring on stuttering were more violent and more severe among those without a family history of stuttering than among the other group.

While it has been thought at times that stuttering shows the greatest incidence between the ages of 4 and 6, that is with the beginning of school life and outside contacts, Miss Nelson points out that the affliction occurred coincident with the onset of speech in the majority of the children she studied.

Eradicating Swimmer's Itch

Dissolving copper carbonate in water in the area of snail beds will eradicate schistosome dermatitis, better known as swimmer's itch or water rash, Sterling Brackett, M.A., Madison, Wis., announces in *The Journal* of the American Medical Association.

The dermatitis is caused by penetration of the skin by the larva of the schistosome cercaria, a parasite of snails most prevalent in the Great Lakes area.

Lead Poisoning from "Canned Heat"

Six cases of lead poisoning among alcoholics who made a practice of drinking "canned heat" are reported by L. D. Wilcox, M.D., London, Ont., in the *Canadian Medical Association Journal.*

"Canned heat" is a product designed for rapid cooking in camps. It is a pink, jelly-like substance containing denatured alcohol with a wax base. Analysis showed that the danger lies not in the original ingredients of the solution but in the lead absorbed from the containers.

Three of the patients died. Two patients had enjoyed the drink over a period of twenty years.

Morquio's Disease

Morquio's disease, a hereditary condition which results in deformities of the skeleton, apparently is transmitted to sons through their mothers, the same as hemophilia, the delayed blood clotting condition common in some of the royal families of Europe, according to A. Wilmot Jacobsen, M.D., Buffalo, N. Y., in *The Journal* of the American Medical Association.

The technical name for the disease is "hereditary osteochondrodystrophia deformans." It is a rare condition in which the typical example is characterized by changes in bodily conformation resulting in the main from shortening of the spinal column and of the necks of the thigh bones.

Poisoning from Jimson Weed

A warning for parents is contained in the cases of the poisoning of two boys from drinking tea made of Jimson weed berries, reported by John D. Hughes, M.D., and James A. Clark Jr., M.D., Memphis, Tenn., in *The Journal* of the American Medical Association.

The Jimson weed is prevalent in this country and in all temperate and tropical zones. It is known by a variety of names.

Night Blindness

Pedestrians as well as drivers may be responsible for traffic accidents due to night blindness, Ira A. Manville, M.D., Portland, Ore., observes in *Northwest Medicine.*

Night blindness has been traced to lack of vitamin A, which is abundant in cereals, vegetables, fruits, whole milk, cream, butter and eggs. Its role in traffic accidents has been established; yet its presence among pedestrians is usually overlooked.

"Observations in Portland indicate that a large majority of pedestrians killed by automobiles are individuals fifty years old or older," Dr. Manville states. He believes that vitamin A deficiency may be even more prevalent among individuals of this age group than among drivers as a group. Cirrhosis of the liver and perhaps other pathologic changes occurring in the liver are more frequent among the aged than among younger people. This would indicate vitamin A deficiency.